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Pulsating High Voltage Short Wave:

*A Preliminary Clinical Report**

Morris Shiffman, M.D., and Frank K. Safford, Jr., M.D.

During the past decade and today the so-called specificity of short wave has remained a speculative problem. Claims in favor of specificity have been made, among others, by Schliephake[1], Weissenberg[2], Reiter[3], Compere[4], Wilson[5], and Jellineck[6]. These claims were refuted rather conclusively by Curtis, Dickens and Evans[7]. Mortimer and Osborne[8], in a report to the Council on Physical Therapy of the American Medical Association, concluded that "the burden of proof still lies on those who claim any biologic action of these currents other than heat." Nevertheless most investigators probably agree with Krusen[9] and Bierman[10] in wishing to retain "an open mind with regard to the possibilities of so-called specificity," and with Hemingway and Stenstrom[11] that there is need for more investigations especially with regard to the so-called athermic effects.

In the spirit of such investigation a new apparatus which applies a short wave field to biological tissue without measurable temperature rise will be herewith described. Also a preliminary report of some clinical applications of this apparatus will be presented.

The original apparatus** consisted of a special high frequency oscillator actuated by a high voltage transformer and a rotating mechanical contactor (later replaced by an electronic circuit) which gave an intermittent or pulsating high frequency electric field. This field was applied to the patient by means of two arm-supported electrodes. The usable field voltage was increased to over 25,000V (usual short wave field voltage is maximum 3,000V). The pulse duration was 1/17,000 of a second, and the interval between pulses was 60/17,000 of a second.

The present model has incorporated a radically new method of applying the high frequency field to the patient. In this model the entire oscillating circuit is in the single "treatment head" of the machine, employing a magnetic field which is coupled directly to the patient without intermediate lead or circuit. No "tuning" of the patient is necessary, and the patient cannot, through movement, become "detuned." The two factors, namely, the use of the magnetic field and the direct coupling of the patient to the primary circuit, without use of secondary circuit, result in a more concentrated field at the treatment site and a considerable reduction of heat and radiation loss. The wave length in this (drumtype) model is approximately 5 meters (shorter than most short wave machines, particularly of the magnetic induction type, most of which operate at 18 to 24 meters). The pulse shape is practically a flat top, nearly all of the

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* Owing to the departure of Doctor Shiffman to the U. S. Army this investigational work was interrupted temporarily.

** This apparatus and subsequent models were developed by A. J. Ginsberg, M. D., and A. S. Milinowski, Physicist. The models used for clinical work were manufactured under the name of "Athermapeutix" for Rex Cole, and loaned by him for investigational use at City Hospital and Welfare Island Dispensary, N. Y.

pulse energy being utilized at a voltage above 90% of the peak voltage. The heating effect during the pulse of this machine is extremely high, but the intervals between pulses are many times longer than the pulse itself. Therefore the heat has many times longer for dissipation than for accumulation, and no measurable temperature rise takes place.

Experimentally by means of this pulsating oscillator circuit it has become more easily possible and practical to investigate the athermic effect of high frequency electric and magnetic fields on biologic tissue. It is possible with this machine to raise the limit of the voltage that may be applied without exceeding the limit of heat tolerance in the patient. With minor alterations of the circuits it would be possible to raise the voltage and lower the frequency (without sacrificing energy to the patient) in order to discover an optimum voltage and frequency combination for therapeutic use.

Before using the machine clinically it was conclusively verified by means of thermocouple temperature readings that no surface or deep temperature rises took place; therefore no confusion due to hyperemic effects, as a result of heat, could complicate the study. The following chart represents the preliminary report on some of the treatments given with this apparatus. (Altogether over 3,000 treatments were given to over 300 patients.)

	Cases Treated	Much Improv.	Some Improv.	No Change	Aggravated	No Check
Sinusitis*	45	12	21	6	0	6
Pelvic Inflam. Disease**	96	39	26	6	2	23
Rheumatoid Arthritis	12	1	5	3	3	0
Subdeltoid Bursitis	4	3	1	0	0	0
Duodenal Ulcers	5	2	2	0	0	1

*In sinus cases cultures and x-rays were taken before, during and after treatments. The cultures were uniformly unchanged. X-rays in completed cases showed 1 case with marked improvement, 6 cases with some improvement, 9 cases unchanged and 1 case with an increase in opacity.

**Sedimentation rates were taken on 53 cases with pelvic inflammatory disease: 30 were normal and 23 increased. After treatment 17 of the abnormals has decreased, 2 increased and 4 showed no change.

Conclusions:

1. A new type of short wave apparatus has been described which it is felt can be of value:
   a) In the investigation of the specificity of short wave.
   b) In its ease of operation, application and comfort to the patient.
   c) In its possible use where it is felt that heat would be contraindicated.
2. A clinical report has been presented which is inconclusive.
3. It is felt that further investigation of the apparatus in both clinical and biologic studies is well warranted.

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Speech Rehabilitation

Marie K. Mason, Ph.D.

The word "rehabilitation" stems from the Latin word "habilis" which means "skillful or able." Its connotation in the field of speech is threefold:

1. To develop skill in speech in those who lack this attribute.
2. To retrain those whose speech habits are defective.
3. To restore, wherever possible, the function of speech to those incapacitated by disease or injury.

Speech rehabilitation therefore refers to the analysis and corrective treatment of disorders and defects of speech.

Speech pathologists and speech correctionists rather generally accept the differentiation between these terms "disorders" and "defects," made by West, Kennedy and Carr.[1] . . . "The former (disorders) is the more comprehensive; it takes into consideration not only the atypical acoustic end result, but also the underlying condition causing it. The latter term (defects) considers only the acoustic end result. Hence all disorders of speech exhibit defects of speech; but not all defects of speech are disorders."

In cases of speech disorders, such as typical cleft palate speech or typical mal-occluded lisp, speech therapy should not begin until surgery or orthodontia is completed. In certain cases where the casual factors underlying the speech defect may be trauma, infectious disease or any other pathological condition, the work of the speech therapist may be pursued concomittantly with that of the medical practitioner. All speech defective cases suggesting the possibility of a physical or physiological involvement should be referred for medical diagnosis before any corrective speech therapy is attempted.

Examination of the literature of the field of speech fails to disclose a comprehensive definition of what is meant by the term "defective speech." West, Kennedy and Carr consider speech defective when it may be described by any one or all of the following:

1. "It is unintelligible, inaudible, or confusing to the auditor.
2. "It draws adverse attention to itself because of its conspicuousness.
3. "It is unpleasant to hear or is accompanied by unpleasant extraneous sounds or by movements unpleasant to behold.
4. "Its production is labored and difficult, or it lacks smoothness or rhythm.
5. "It is inappropriate to the age of the patient in type, amount, rate, or degree of development."

Defective speech receives various classifications in speech pathology. A general classification divides speech defects into four separate categories: defects of articulation; defects of phonation; defects of symbolization, and defects or rhythm.[2]

The first group, the articulatory faults, represent a very large percentage of all speech defects. These problems range from an extremely slight faulty production of perhaps one or more sounds to an almost unintelligible utterance of the majority of consonants and vowels. Articulatory problems may exist in a child's tendency:

1. To omit certain sounds (the "k" in "asked" pronouncing it "ast" [æst]) and to add others (a "d" in "drowned" pronouncing it "drownded").
2. To substitute a postdental consonant for a palatal, as for example "tanny" for "candy" or "doddie" "doggie".
3. To faulty production of sounds such as the consonant "s" with a lateral emission of breath (producing a lateral lisp), or a too low or too high tongue tip position (producing a dull or a whistled "s").

By far the greater majority of dyslalias (articu-

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latory defects) in children are due to causes other than anatomical or physiological. Contributing factors which tend to initiate these dyslalias may be:

1. Incorrect speech patterns in the home, together with the child's natural imitative powers.
2. Tendency on part of parents to encourage child's perseverance in infantile speech.
3. Too frequent statements by family physician that "child will outgrow his speech defect."
4. Undiscovered hearing inacuity.
5. Lack of attentive listening to speech sounds.

Dyslalias persisting beyond childhood, into adolescence and often into adulthood all too frequently set up psychogenic problems of maladjusted personality and peculiar behavior in those so handicapped. Some of many examples within the author's experience are:

Case I: A University freshman who consistently substituted "w" for "l" said he came to study "waw." He became indignant when recommended to the speech clinic.

Case II: A University freshman whose speech was almost wholly unintelligible. He was brought to the clinic by his mother who wished him to register in engineering. Psychological findings on this case were not available. However, frequent reports of his peculiar behavior reached the clinic from various sources on the campus.

Case III: A ten year old boy of high intelligence, presenting a serious case of infantile perseveration on many consonants and a persistent substitution of "w" for "r." Feelings of intellectual superiority prevented this boy from making as speedy and complete correction as was possible for him to achieve.

The above discussion of articulatory defects is by no means intended as an exhaustive treatise on the subject of this most common defect—dyslalia. The several illustrative cases mentioned are but types of this prevalent and varied speech problem which may be a concomittant of all other speech or vocal difficulties.

Defects of phonation may be grouped in the second classification of speech problems: the aphonias or complete loss of voice, and the dysphonias, partial loss or incorrect production of voice. Any physical, physiological or psychological involvement affecting the free vibratory movement of the vocal bands is productive of phonatory difficulty. Inflammation of the membranous surfaces of the vocal bands, and tension and constriction in their vibratory action produce the harsh throaty and strident qualities we hear in the voices of many with whom we come in contact.

Disease, worry and fear leave their imprint on the voices of their victims. Extreme age likewise affects a change in the vocal quality of those of mature years.

Pitch, intonation, volume and quality depend for their interpretation upon the human ear. Consequently any serious hearing inacuity affects the vocal properties of the acoustically handicapped. Vocal therapy may be given successfully (depending upon the patient's residuum of hearing) by mechanical sound amplification or through development of the tactile sense.

Many University students and children with varying degrees of residual hearing receive voice and speech training in the speech clinic. Their powers of visual observation also are trained so as to enable them to comprehend spoken language through the eye instead of the ear. A method of instruction in this phase of speech was developed by the author and has been used at Ohio State University since 1930. This method provides a laboratory drill in the visual comprehension of what a speaker says as he is observed on a silent screen.[3a,b] This laboratory work has its value as a corrective speech and voice therapy for use with those of impaired hearing.

A type of dysphonia which presents a serious vocal problem by reason of its prevalency and its existance as a result of a number causes is that of nasality.

Nasality may be present in the voices of many other cases as well as in the following:

1. The acoustically handicapped.
2. Postoperative cleft palate cases.
3. Mouth, throat and nasal malformations.
4. Intense emotional states.

From among many clinical cases, one cleft palate postoperative case may be chosen. A girl of ten, of good intelligence and pleasing personality was sent to the author by her palate surgeon. Extreme nasality was present in practically all vowels and consonants. Speech therapy at first consisted of various types of exercises to direct the breath through the mouth instead of the nose —blowing about light objects such as feathers, toys, candle flame, whistle, etc. Exercises to relax the tension of the velum followed, and finally those which would assist her in a correct production of the sibilants (s) (z), and the fricatives (f, v, th, sh, ch) and palatal plosives k and g. Gratifying results were achieved in a short

period of time and were indicative of future progress to be expected if the speech therapy is continued in the city to which the father's work was transferred.

In the third group of speech disorders are grouped those in which speech is completely or partially lost due to brain injury: cases of cerebral palsy, aphasia, dysarthria and others.

Dysarthria may be defined "as a speech disorder due to disturbances of innervation to the muscles controlling the speech mechanism."[4] It usually implies involvement of the central nervous system due to lesions affecting various parts of the brain or of the peripheral nerves. The terms dysarthria, cerebral palsy, spastic paralysis, Little's disease, and birth injury are at least roughly synonomous in the literature on this most challenging disorder of speech.

The speech symptomology in cases of cerebral palsy varies from complete inarticulateness, to extremely labored speech or to very rapid or very slow articulation. In some cases speech is spasmodic; in others indistinct and labored. The voice quality often is either high pitched or low pitched, sometimes breathy, usually monotonous except under emotional strain. The degree and nature of the speech or vocal difficulty depends upon the extent and type of injury affecting the cerebral cortex.

SUGGESTED SPEECH THERAPY FOR CEREBRAL PALSY CASES

Since by definition cerebral palsy is the result of hypertonicity of muscular tension, speech therapy must begin with tension release. Obviously the speech therapist cannot work for relaxation of the delicate articulatory and phonatory muscles until the child has mastered a reasonable control over the larger muscles of the body. Breathing exercises may be given simultaneously with the relaxing exercises; molding the facial muscles into position for speech sounds may follow.

The age, disposition and interests of the individual child must be taken into account. For the very young child all work should take the form of play. Whenever possible all speech and vocal drill should be adapted from materials, games, toys, etc., used with normal children. "Speech Drills in the Form of Play" by Ida Case and S. Barrows may offer many suggestions to the physical therapist who may be required to do something about the speech of the cases in her charge. Other suggestions are:

Treatment

a. Spasticity presents a many-sided problem:
   1. Establishment of emotional control
      (a) Develop the optimum physical condition necessary for self-control with a daily schedule of sleeping, eating and elimination habits, rest periods, study hours, recreation, relaxation and massage, and training in muscle coordination and speech.
      (b) Avoid situations, relationships and attitudes that arouse emotional responses.
   2. Development of general muscular coordinations from which are evolved the delicate and complex coordinations required for phonation and articulation.
   3. Sometimes the extraneous movements mask a normal or superior intelligence.
   4. In undertaking the speech rehabilitation of the spastic, the clinician must recognize that improvement will be both slow to appear and slight at first; the changes will be so gradual as to be barely perceptible; both clinician and patient must be prepared to work incessantly and patiently; but both can look forward hopefully, for the gains made will be lasting.

b. Exercises for Relaxation
   1. While the patient is lying down or seated at ease with hands lying in the lap, lift his hand at the wrist, and let it drop of its own weight. Similarily, lift at the forearm, elbow, and upper arm. Continue this passive exercise until both arms and both legs have been manipulated.
   2. Roll his head from side to side until his resistance to the movement decreases to a minimum.
   3. Now grasp the hand and shake the entire arm; grasp the leg at the ankle and shake the foot; lift the leg at the knee and shake it gently.
   4. When neck and facial muscles are relatively free from tensions, grasp the chin and shake it gently (the jaws must be slightly separated).
   5. Have the patient lift in turn his arms, legs and head, letting them fall without resistance. Suggest to him that they should feel heavy as they drop.
   6. Have him tense every possible muscle—clench his fists and his jaw and push down with arms and feet—then suddenly relax and note the contrasting relaxation.

c. Exercises for Coordination:
   1. Basic walking coordination: Indicate by markers on each side of a line the spots on which the child is to step while walk-

ing. Have him walk, placing his feet as accurately as possible on these markers.

2. Picking up feet to avoid a shuffling gait: With chalk or strips of paper, outline a ladder on the floor, spacing the rungs to suit the patient's need. Have him step *over* each rung as he "climbs" the ladder.
3. Arm and hand and leg coordination: Repeat exercise 4, and, as the hands move up and down, have him move the legs up and down also, lifting them from the hip.
4. Arm and hand coordination: Suspend firmly a soft rope about an inch in diameter and seat the patient within easy reach of it. Have him grasp the rope with both hands and proceed as if he were climbing it, hand over hand, alternately grasping and releasing. Have him "climb down" similarly.
5. Leg and foot coordination: Have the patient sit with his feet flat on the floor, his hands palm down on his legs. With his heels as a pivot, have him raise the toes from the floor; then drop the toes and lift the heels, using the toes as a pivot. Repeat.
6. Hand and arm coordination: Have him perform Exercise 5, using wrist and finger tips as pivots.
7. Arm, hand and leg coordination: Have the patient perform Exercises 5 and 6 simultaneously.

d. Exercises for Control of the Articulators:

1. Grasp the patient by the chin and move his jaw up and down.
2. With your finger tips, move his checks backward and forward. Now put your finger tips at the corners of his mouth and push his lips forward and draw them back. (These are basic movements for vowel formation).
3. Holding his tongue with a sterile towel, manipulate it in every possible direction.
4. Have him open his mouth, hold it open a few seconds and then close it.
5. Have him clench his jaw and alternately protrude and retract his lips.
6. Have him repeat the lip action in Exercise 5 with jaw slightly dropped.
7. Have him drop his jaw slightly and alternately protrude and retract his tongue.
8. Have him open hir mouth slightly, protrude his tongue and swing it from corner to corner of his mouth while keeping the mandible inactive. Follow with general articulatory exercises and exercises for the velum.

e. Exercises for Breath Control:

1. Have the patient lie relaxed, breathing quietly and naturally. Hold his hand lightly on the abdomen so that he can feel the rhythmic rise and fall of the abdominal wall.
2. Have him shorten slightly the time for inspiration and prolong slightly that for expiration; later these changes in time may be gradually lengthened so that his breathing for speech approximates that of a normal person.
3. Have him repeat Exercise 2, intoning an open vowel sound on the expiration.
4. Have him repeat the first three exercises while sitting and while standing.
5. Place a feather or bit of tissue paper on a card or tray and hold it in front of his mouth. Have him try to puff it off.
6. Suspend a bit of tissue paper in front of him and have him try to blow it steadily. Suggest that he round the lips to do so.
7. Have him repeat Exercise 6, using a vowel tone while blowing, trying to keep it steady.
8. Have him breathe in as you count, 1, 2, 3, 4; hold his breath for the same count, breathe out for the count, and hold without breathing for the same time. If this period proves too long, use a shorter count.
9. Repeat the coordination exercises given above, accompanying them by counting or by repeating appropriate rote words or phrases.[5, 7, 9, 10]

f. Robbin's procedure:

1. Begin with relaxation exercises and muscle training exercises, starting with the coarser muscles and proceeding gradually to the finer muscles such as those used in writing and in speech.
2. When a child has sufficient control over muscles used in articulation, teach him how to shape those phonetic units which he formerly made incorrectly or omitted.
3. Tell him not to hurry, exert as little effort as possible, be careful not to use any muscles which are not needed, keep his eyes on his teacher's throat so that he will not throw his head to one side, look in a mirror frequently to make sure he is not making unnecessary grimaces.
4. After this, use the same treatment which is given to stutterers.
5. Teach him to breathe calmly and to start the first syllable in each sentence with a

loud sigh. Accent important words and syllables by prolonging their accented vowels rather than by forcing them in a high-pitched voice. Touch unaccented words and syllables very lightly and quickly. Speak in a quiet low-pitched voice.

6. Use modern mental hygiene methods to help him acquire better control over his emotions. Emotional tension increases spasticity and aggravates the speech defect.[15]

Clinical speech work with cerebral palsy cases can best be accomplished by a speech therapist working in collaboration with a neuromuscular specialist, a physical therapist, and an occupational therapist. Failing this ideal situation, the physical therapist and occupational therapist, undoubtedly would receive help through some specialized speech courses during their period of training.

Another interesting and baffling type of speech disorder is aphasia in all of its many and varied forms. There is perhaps no type of speech disorder concerning which there is greater speculation and less contradiction. "Aphasia and kindred disorders of language consist essentially of a want of power to carry out with ease acts connected with articulated speech and the comprehension of spoken words."[3] It is not within the narrow confines of this paper to present a discussion of this very wide field of speech therapy. Challenging as it may be, handling of this entire subject becomes the complicated task of a more elaborate article than this. Of more immediate interest is a brief discussion of several cases of aphasia and cerebral palsy.

These cases have been chosen from the Speech Clinic, as illustrative cases rather than as conclusive evidence.

CASE I: A cerebral palsy case, a girl of seventeen from a southern city. Therapeutic measures had resulted in establishing muscular coordinations in both arms and legs leaving only a trace of spasticity in the right leg.

Her speech was characterized by extreme nasality. The consonants s, sh, ch, k, g, ng, d, b, n, and almost all of the vowels were incorrectly produced. There was but slight tongue control to the extent that all speech sounds could be characterized as "cluttering."

During the speech therapy period some progress was noted in the articulation of speech sounds, but the nasal quality did not alter noticeably.

Her speech progress was probably impeded by her absorption in the social life on the campus and in her sorority activities.

CASE II: A girl of eight, one of eight children in a family which was deserted by the mother when the child was six years old. This child has a medical diagnosis of cerebral palsy and aphasia of the transcortical type. She had not talked until the time of her first visit to the Speech Clinic on which occasion she attempted under suggestion to say the word "no."

There was constant drooling which now has moderated. She was unable to effect a complete lip closure. There was rigidity of tongue and jaw.

Now there is considerable progress in tongue control; the lips are approximated in a true closure on labial sounds. She now has a vocabulary of about twenty-five words. She repeats numbers to ten. She can blow a candle flame with steady control—can play a mouth harp. The neurologist on the case cannot account for the progress this case has made during her period of speech therapy in the clinic.

What the future prediction in speech progress will be cannot at present be determined.

CASE III: A most interesting case of combined aphasia and spasticity due to brain trauma following a serious automobile accident. "E" was a very successful dentist's technician until the accident. Following the accident there was a long hospitalization, during which death was momentarily anticipated. When finally recovery seemed possible, it was believed that speech would never return.

My work with "E" began in April 1942. At first her speech attempts were extremely labored, at times almost inarticulate. Bizarre movements of the facial muscles were present to a marked degree. The tongue was rigid and uncontrolled. Spasticity was present to a noticeable degree on the entire left side extending to the facial muscles.

"E's" speech rehabilitation has covered a period of part of four University quarters. The therapy has included various exercises with whatever mechanical devices could be pressed into service. The speech drills at first were confined to tongue, jaw and lip relaxation exercises. Words followed and were articulated with extreme muscular tens-

ion. The vocal quality at first was denasalized and monotonous. Intonation patterns were taught, and rhythmic speech education was given by means of the piano, dramatics, poetry reading, etc.

Before concluding this paper, mere mention is made of the fourth type of speech defects, namely those of rhythm. Stammering, stuttering and hesitancy fall into this final category. Literature on this subject occurs abundantly in books and periodicals pertaining to speech and psychology. From this wealth of material, help may be obtained by those seeking this information.

In conclusion, the author wishes to state that the objective of this paper has been to suggest sources of information on the speech rehabilitation of these specialized types of speech disorders. No attempt has been made to dictate what particular speech therapy shall be used in rehabilitation. Bibliographical references are offered as help.

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Physical Therapy in a Coordinated Rehabilitation Program

A Report of the Meeting of the National Council on Rehabilitation

At the second meeting of the National Council on Rehabilitation which met at the Ritz-Carlton Hotel in New York City, September 13-14, the term rehabilitation was defined in a few simple words. "Rehabilitation is the restoration of the handicapped to the fullest physical, mental, social, vocational and economic usefulness of which they are capable." A thoughtful study of this definition should make us take pause and examine our place as physical therapy technicians in this vast program which is the inevitable aftermath of armed conflict.

Physical therapy procedures are as old as man yet it was not until World War I that physical therapy became recognized as an integral part of medicine, and out of that war was born physical therapy as we know it and our own organization, the American Physiotherapy Association. What lessons will we learn in World War II?

As Great Britain and the U.S.S.R. are chronologically more advanced by way of experience than we are, a study of their great rehabilitation centers points to the handwriting on the wall. The future of physical therapy lies first in our recognition and understanding of the total program of which physical therapy is an inherent part and, secondly, an assumption of our place as a necessary constituant of the complete program. Already rehabilitation centers have been established in military, veteran, industrial and civilian programs. Laws have been passed providing federal and state aid to such plans. During this war and

surely after it, it is certain that further public and private services in rehabilitation will be organized.

To refer back to the definition of rehabilitation, concretely it may be transposed to read: Rehabilitation is the use of medicine, surgery, psychiatry, physical therapy, occupational therapy, curative workshops, sheltered workshops, vocational re-education, and other therapeutic and social services working together to the purpose that the handicapped may realize their unalienable right to the "pursuit of happiness." These services, each invaluable, are tools a hundredfold more valuable when used to complement each other.

The Right Honorable Ernest Bevin, M.P., Minister of Labor and National Service, in a speech before the London County Council stressed the simultaneous use of medical, social and industrial services as follows: "We begin the work of vocational training immediately a person enters the hospital . . . . It is a new development of wider social service and we believe with the cooperation of the medical service and the beginning of rehabilitation immediately, we can save a good deal of human suffering and create hope in the injured person that he is not going to be left out."

The introduction to the report of the Interdepartmental Committee on the Rehabilitation and Resettlement of Disabled Persons presented to the British Parliament, January 1943 states: "The successful rehabilitation of a person disabled by injury or sickness is not solely a medical problem. Rehabilitation in its strictly medical sense means the process of preventing or restoring loss of muscle tone, restoring the full function of the limbs, and maintaining the patient's general health and strength. The process should begin as soon as possible after injury or operation or, in case of prolonged illness, as soon as the patient's condition permits, and it should continue not only throughout the period of hospital treatment but also during the subsequent stage of convalescence that takes place in hospital or in a separate center. Continuity of treatment is essential to achieve the aim of restoring the patient's mental and physical capacity at the earliest possible date and to the fullest possible extent.

"When restoration in the medical sense has been achieved the services of the social industrial expert are required; first to determine in consultation with the medical experts whether the patient so restored can return to his previous occupation and, if not, what other type of occupation would be most suitable; and second to insure in so far as possible that the restored capacity is used to the best advantage in the field of productive effort, whether in previous or in some other occupation. During the process of rehabilitation in this wider sense there is transfer of responsibility from the medical to the industrial services and the industrial service should begin to operate before the medical service ends. This means that there should be the fullest cooperation between the two services throughout the rehabilitation process. . . . This is especially important at the stage between the end of medical and the beginning of industrial rehabilitation, but it should be continued to the later stage of resettlement so that the industrial services have the benefit of medical advice and the medical services can acquire knowledge of the effect of disablement upon occupational capacity."

Realizing the importance of a cooperative program on August 15-16, 1942, a group of delegates representing thirty-eight national voluntary agencies met in New York and agreed to establish an association of agencies concerned with rehabilitation of the handicapped. On September 13-14, 1943, the chairman, Dr. Philip Wilson, called the second meeting of these agencies at the Ritz-Carlton Hotel in New York City. The American Physiotherapy Association sent a representative, Miss Hazel Furscott, your Relations Chairman.

Following the minutes, the reports from the Executive Committee were given; the Chairman, Dr. Philip Watson appointed your representative to be Chairman of the Constitutional Committee. She felt this was a courtesy extended in appreciation of the pioneer work done by the American Physiotherapy Association. The Consitutional Committee submitted a provisional constitution to be acted upon by member agencies at the annual meeting of the governing board of the American Physiotherapy Association. This Constitution was approved by that board and we are a member agency of the National Council of Rehabilitation. Your representative was elected Second Vice-President of the Council.

Miss Evelyn C. McKay of the American Foundation for the Blind opened discussion on the qualifications of rehabilitation personnel. "Current rehabilitation can be described in four steps —counseling, training, placement and follow-up. Still to be covered are physical rehabilitation (including medical and surgical care) and psychological rehabilitation (including case work and psychological adjustment). Among the organizations represented, standards are already set up in varied fields, but coordination is needed.

"Standards should be set up for the benefit of vocational guidance and rehabilitation teachers who will want to train in this field. Many agencies, both voluntary and official, will be interested

in trained rehabilitation personnel.

"Standards for the official personnel in the civilian program are to be set by the Federal Government under the law to insure uniformity. These standards will have to be within reach of the states, in accordance with their population—possibly with standards in heavily populated states higher than less populated states. Interest on the part of universities and colleges to produce qualified workers should be stimulated."

Miss McKay moved, and it was voted, that there be two committees.

1. A committee to define the process of rehabilitation.
2. A committee on personnel qualifications, standards and facilities for training.

Colonel John N. Smith, Jr. reported on Federal rehabilitation legislation with regard to veterans, a subject difficult to describe because of the many laws which affect it. Public Law No. 16 has added another part to the veterans' regulations.

Section I provides for pensions, and sets the following requirements for those eligible for vocational rehabilitation:

1. Service limited to those veterans who served after December 6, 1941, and before the termination of this war.
2. Honorable discharge.
3. Disability must have been incurred in line of duty in World War II.
4. Vocational handicaps due to such disability.
5. Need for vocational rehabilitation to overcome such handicaps.

If a veteran is ineligible under the requirements for vocational rehabilitation specified in Section I, he can use the civilian program. He cannot, however, use both.

Determining what is or is not a vocational handicap is important. Provision was made in Public Law 16, Section 3, for determining the existence of a vocational handicap.

The whole administration of the vocational rehabilitation program is highly decentralized. There are four governmental agencies represented and one social agency, the American Red Cross.

Another bill of major importance passed this year is Public Law No. 113, an act to promote vocational rehabilitation of persons disabled in industry or otherwise and their return to civil employment. Public Law No. 113, the so-called "Barden Bill," is an amendment which is a grant and aid program of the Federal Government to the States on a fifty-fifty matching basis very much like the Crippled Children's Services. It takes Vocational Rehabilitation out of the Department of Education and puts it under the Federal Security Administration, Mr. Paul McNutt, Administrator; Mr. Michael Shortly, Director.

The highlight of this bill as far as physical therapy is concerned is that the term "vocational rehabilitation" has been expanded to include corrective surgery and therapeutic treatment. So that physical therapy may not be overlooked, your representative upon request sent a definition of physical therapy to the Federal Security agency. In the directive to States the Federal Security Agency states that "Qualifications for technical specialists should be those which have been established by the professional organization of these workers."

Mr. Holland Hudson and Mr. Walter Wenkert of the National Tuberculosis Association reported on the work of the United States Employment Service explaining the analysis of jobs to meet the abilities of the handicapped worker.

The aims and purposes of the Council as specified by the Constitution adopted at this meeting are: To study, encourage and advise upon the development of rehabilitation programs and services on Federal, state and community levels; to study and encourage programs and services which are designed to prevent handicaps; to serve as a forum for the discussion of problems affecting the handicapped and means of effectively solving such problems; to act as a medium for exchange of information between all agencies concerned with rehabilitation here and abroad; and to cooperate with all agencies and groups, public and private, concerned with and interested in rehabilitation.

Membership is divided into the following classes: active voting members; associate members; and contributing members.

Active voting members are duly elected voluntary agencies of national scope engaged in, or concerned with rehabilitation and/or prevention of handicaps. Active members shall be required to pay dues.

Associate members are duly elected voluntary or governmental agencies of national scope engaged in, or concerned with rehabilitation and/or prevention of handicaps. Associate members are not required to pay dues.

Contributing members are duly elected business, industrial, labor, fraternal, service or other organizations interested in, or concerned with rehabilitation and/or the prevention of handicaps, making contributions. Active members also may become contributing members.

Admission to all classes of membership is by invitation or upon application to the Council, or the Executive Committee. The annual dues of ac-

tive agency members are $25; associate members are encouraged to make voluntary contributions to assist in the support of the Council and annual fees for contributing members are $25 or more.

The National Council may assist in the development of state councils of rehabilitation consisting of state or local agencies having the same interests and activities in rehabilitation as are prescribed for membership of national agencies in the Council, providing, however, that such state councils must have purposes on the state level comparable with the purposes of the Council on the national level. Associate membership in the Council may be extended to include state councils providing that the constitution and by-laws are approved by the Council. If state councils have comparable interest, that may participate in financing and exchange of information with the Council.

At the elections the following members were chosen:

OFFICERS:

Dr. Philip D. Wilson, President
Colonel John N. Smith, Jr., First Vice-President
Miss Hazel E. Furscott, Second Vice-President
Mr. Holland Hudson, Secretary-Treasurer

EXECUTIVE COMMITTEE:

For one year term

Mr. Harry H. Howett
Miss Evelyn C. McKay
Miss Sadie Shapiro

For two year term

Mr. Holland Hudson
Colonel John N. Smith, Jr.
Dr. Philip D. Wilson

For three year term

Miss Carmelita Calderwood
Miss Hazel E. Furscott
Dr. Thomas Rennie

For a thorough program it is needful that the workers watch the programs in their performance and achievement and advise thereupon. This, of course, is one of the functions of the National Council on Rehabilitation and the appointment by Mr. McNutt of Miss Catherine Worthingham, president of the American Physiotherapy Association, to the Advisory Committee of the Vocational Rehabilitation Division of the Federal Security Agency and by Madame Perkins of Miss Lucy Blair to the Advisory Services for Crippled Children of the Department of Labor gives the American Physiotherapy Association opportunity to accomplish this end.

HAZEL E. FURSCOTT.

(1) Relations Chairman, American Physiotherapy Association
(2) Representative of the American Physiotherapy Association to the National Council on Rehabilitation
(3) Second Vice-President of National Council of Rehabilitation

REFERENCES

The Interdepartmental Committee on the Rehabilitation and Resettlement of Disabled Persons—presented to the British Parliament, January 1943.

Right Honorable Ernest Bevin, P.C.M.P. Minister of Labor and National Service—speech before the London Council.

Provisional Constitution of the National Council on Rehabilitation.

Minutes of the meetings of the National Council on Rehabilitation, August 15-16, 1942; September 13-14, 1943.

Exhibits Available

1. "Reproductions of the Pictures on the History of Physical Therapy":
   8 posters, 22x28 inches, containing 19 reproductions of pictures on hydrotherapy, electrotherapy, massage, exercise, etc., from the earliest times. Posters will be shipped in frames ready for hanging. Weight when packed for shipping 60 pounds.
2. A motion picture film 200 feet long, on "Massage." (16 mm.)
3. "Posture Plays an Important Part in the Physical Therapy of Bed and Convalescent Patients":
   6 posters, 22x28 inches, in frames with photographs showing: good and bad posture of a patient in bed; good and poor posture in a wheel chair; instruction in walking with crutches and with a "walker." Weight when packed for shipping approximately 60 pounds.
4. "Statistical Map" showing schools approved by the American Medical Association, location of American Physiotherapy Association Chapters, Membership, etc. Weight when packed for shipping 46 pounds. This is in pastel colors. Should be displayed on an easel as it is too heavy to hang. Size 45x35 inches.
5. Poster 22x28 on the American Physiotherapy Association. "Requirements for Membership, Curriculum Content, Scope, Membership and Chapter Growth."
6. A motion picture film (16 mm.) "The Maintenance of Neutral Position of Patients with Infantile Paralysis During Nursing Care in the Hospital and in the Home."
7. Poster showing publications of the American Physiotherapy Association individually mounted (with request slips).
8. Poster: "The Nation Needs Physical Therapists."
9. Poster on pool construction and design.

For information regarding these exhibits, write Dorothy Dean, Exhibits Chairman, 303 E. Chicago Ave., Chicago 11, Ill.

Schools Approved for Training Physical Therapy Technicians

By the Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Medical Director	Technical Director	Entrance Requirements *	Duration: Regular Course	Duration: Emergency Course	Time of Admission: Regular Course	Time of Admission: Emergency Course	Tuition**	Certificate Diploma Degree **
Children's Hospital, Los Angeles	Steele F. Stewart, M.D.	Miss Lily H. Graham	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	12 mos.	6 mos.[1]	Feb. and Sept.	Feb. and Sept.	$200 R $200 E	Diploma R Certificate E
Stanford University, Stanford University, Calif.	William H. Northway, M. D.	Miss Catherine Worthingham, A.B., M.A.	(a) R. N. (b) Phys. educ. major (c) 3 yrs. coll.	12 mos.[1]	7 mos.[1]	Jan. and June	Jan., Mar. June and Sept.	$429 R $286 E	Certificate or B. A.
Walter Reed General Hospital, Washington, D. C.	B. A. Strickland, Jr. Capt., M. C.	Miss Emma E. Vogel	Phys. educ. major	.....	6 mos.	.....	Quarterly	None	Certificate
Northwestern University Medical School, Chicago	John S. Coulter, M. D.	Miss Gertrude Beard, R.N.	(a) R. N. (b) Phys. educ. major (3) 3 yrs. coll.	9 mos.[1]	6 mos.[1]	Oct.	Jan. and July	$200 R $200 E	Certificate
Bouve'-Boston School of Physical Education, Boston	Arthur L. Watkins, M.D.	Miss Constance K. Greene	High sch. grad.	3 yrs. 4 yrs.[2]	6 mos.	Sept.	Aug.	$400 yr.	Diploma or B. S.
Harvard Medical School, Boston	Frank R. Ober, M.D.	Miss Janet B. Merrill	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.[3]	9 mos.	6 mos.[1]	1944—exact date on inquiry		$200 R $200 E	Certificate
Boston University, Sargent College of Physical Education, Cambridge, Mass.	Louis Howard, M.D.	Mrs. Lucille W. Fuller	2 yrs. coll.	2 yrs.	*	Oct.	-	$547	Certificate and B S.
University of Minnesota, Minneapolis	M. E. Knapp, M.D.	Miss Sara E. Kollman, R.N.	(a) R. N. (b) Phys. educ. major (c) Medical technology grad. with B.S. degree	12 mos.[1]	.....	June and Sept.	.....	Univ. fees	Certificate
Mayo Clinic, Rochester, Minn.	Frank H. Krusen, M.D.	Mr. Carl O. Moe, R.N.	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	.....	6 mos.[1]	.....	Jan. and July	None	Certificate
St. Louis University School of Nursing, St. Louis	Alexander J. Kotkis, M.D.	Sister M. Consella, R.N.	High sch. grad.	4 yrs.[1]	.....	Jan. and Sept.	.....	$250 yr.	B. S.
Hospital for Special Surgery, New York City	Kristian G. Hansson, M.D.	Miss Ethel M. Willmer	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.[1]	6 mos.[1]	Sept.	Sept.	$300 R $200 E	Diploma
D. T. Watson School of Physical Therapy, Leetsdale, Pa.	Jessie Wright, M.D.	Miss Kathryn Kelley	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.[3]	12 mos.	.....	July	.....	$200	Diploma
Richmond Professional Institute of the College of William and Mary, Richmond, Va.	Thomas W. Wheeldon, M.D.	Miss Alice Jones	(a) R. N. (b) Phys. educ. major (c) Coll. grad. (d) High sch. grad.	9 mos. 4 yrs.	....	Feb. and Sept.	.....	Coll. fees	Certificate or B. S.
University of Wisconsin Medical School, Madison	Ernst A. Pohle, M.D.	Miss Margaret Kohll, B.S.	(a) R. N. (b) Phys. educ. major	12 mos.[1]	6 mos.	Feb. and Sept.	Feb. and Sept.	Univ. fees	Certificate

Name and Location of School	Medical Director	Technical Director	Entrance Requirements	Duration Regular	Duration Emerg.	Time of Admission	Tuition	Certificate Diploma Degree
College of Medical Evangelists, Los Angeles	Fred B. Moor, M.D.	Albert H. Carlson	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	12 mos.	.....	Jan. and July	$ 225	Certificate
Barnes Hospital, St. Louis	Frank H. Ewerhardt, M.D.	Beatrice F. Schulz	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.	6 mos.	Oct.	$200	Certificate
New York University, New York City	William Bierman, M.D.	G. G. Deaver, M. D.	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.	.....	Sept.	$396	Certificate, B. S. or M. S.
University of California Hospital, San Francisco	Frances Baker, M. D.	Mrs. Margery Wagner	(a) R. N. (b) Phys. educ. major (c) Coll. grad.	12 mos.	.....	Oct.	$150	Certificate
University of Iowa, College of Medicine, Iowa City	W. D. Paul, M. D.	Mrs. Olive Farr	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.	6 mos.	Mar. and Sept.	None	Certificate
Cleveland Clinic Foundation Hospital, Cleveland, Ohio	Walter J. Zeiter, M. D.	Anna Wetterhuus, R.N.	(a) R. N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.	.....	July	None	Certificate
Graduate Hospital, University of Pennsylvania	Wm. T. Johnson, M. D.	Samuel Henshaw	(a) R. N. (b) 2 yrs. coll.	12 months	.....	Sept.	$200	Certificate
Duke University, School of Medicine, Durham, N. C.	.....	Helen Kaiser	(a) R.N. (b) Phys. educ. major (c) 2 yrs. coll.	9 mos.	.....	Sept.	$200	Certificate
Army & Navy General Hospital, Hot Springs National Park, Ark.				.....	6 mos.			
Fitzsimons General Hospital, Denver, Colo.				.....	6 mos.			
O'Reilly General Hospital, Springfield, Mo.				.....	6 mos.			
Brooke General Hospital, San Antonio, Tex.				.....	6 mos.			

* Courses are so arranged that any of the entrance requirements (a, b, c or d) will qualify students for training.
** R = Regular course; E = Emergency course.
1. Male students are admitted.
2. Four year course leads to B. S. degree from Simmons College.
3. This group admitted to emergency course only.
4. Emergency course offered in cooperation with Harvard Medical School.
5. Only those with three years of college are admitted to emergency course.

Reprints

"Physical Therapy as a Vocation"

"Approved Schools of Physical Therapy"

"Training of Physical Therapy Technicians"

The Constitution of the American Physiotherapy Association

Code of Ethics and Discipline of the American Physiotherapy Association

The Blue Booklet, "The American Physiotherapy Association is Organized to Serve"

"What Does a Physical Therapy Department Contribute to a Hospital?"

"A Study of Physical Therapy Costs in Industrial Medicine"

"Role of the Physical Therapist in the Care of the Crippled Child"

"Ethics and the Physical Therapy Technician"

"Bulletin of Information, American Physiotherapy Association"

List of National and Chapter Officers of the American Physiotherapy Association

To obtain any or all of these reprints, address Miss Hazel E. Furscott, Chairman, Relations Committee, 219 Fitzhugh Building, San Francisco, California. Single reprints, 10c; complete set of reprints, 25c. Free to nonmembers.

The
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We have come to the end of another year, but this year we can look ahead to 1944 with greater hope and optimism. All over the world the United Nations are on the offensive. Our fighting men are turning the tide and we can hope for their return in the not too distant future. The splendid work of the medical corps will make history, for the lives of many critically wounded men have been saved. The nurses and physical therapy aides are contributing greatly to the recovery of the sick and wounded. We are very proud of those aides who are in service both overseas and in this country. Their service is unmeasurable and through them the art of physical therapy is being recognized more and more.

Annual Executive Committee Meeting Report

The annual meeting of the Executive Committee was held in Chicago from October 22 to 26 with all members of that committee and committee chairmen attending.

The agenda for this five day meeting included a review of the activities, policies and projects of the Association and planning for the future in the matter of routine business, contribution to the war effort and full participation in all activities pertinent to the Association and its members.

The reports for the year 1942-43 (REVIEW, Vol. 23, No. 4) were accepted by this committee and will be presented to the membership for approval at the next general meeting. Reports of officers and committee chairmen from May 1943 to date were presented and discussed.

As had been previously announced, the two sessions on October 23rd were devoted to the discussion of chapter problems and relations. The response of the chapters to this part of the meeting was gratifying and stimulating. A detailed report by the Chapter Relations Chairman appears elsewhere in this issue.

A review of the activities of the Rehabilitation Council, in which the American Physiotherapy Association has actively participated since its organization, was thoroughly presented and discussed. A full report by the Relations Chairman appears in this issue.

A considerable amount of time was devoted to discussion of the work being done by the Committee on Education and plans and policies for further expansion were outlined.

The slide project being developed by the Committee on Exhibits is of noteworthy interest. The commendable work already accomplished by this committee was presented to the Executive Committee for approval and suggestions.

The nominating committee elected to prepare the slate for the coming elections is as follows: Mary Nesbitt, Chairman; Hazel Furscott and A. Garman Dingwall.

Adelaide McGarrett, chairman, Margery Wagner and Constance Greene were appointed to study and draw up several proposed changes in the Constitution and By-laws to be presented at the next general meeting.

Groundwork and tentative plans for the 1944 conference are under way. Complete information and details will be presented in the very near future through this publication and letters to the membership.

Respectfully submitted,
EVELYN ANDERSON, Secretary

Transfer of Membership

There have been many questions concerning how to transfer membership from one chapter to another. Miss Betty Rice, Membership Chairman, gives the following instructions:

When a member moves to a new area where there is a chapter, she should write to the secretary of her present chapter and ask that a transfer be sent to the secretary of the chapter to which she wishes to belong. The secretary of this chapter will then inform her when meetings will be held.

Chapter Relations Committee

The Saturday sessions of the National Executive Committee Meeting, which was held at the Edgewater Beach Hotel, Chicago, October 22nd —26th inclusive, were devoted entirely to chapter problems. Chapters were invited to send representatives for these sessions. Fourteen chapters were represented unofficially by members present.

Chapter	*Representative*
California	Mrs. Margery L. Wagner
Carolina	Miss Helen Kaiser
Georgia	Miss Alice Lou Plastridge
Illinois	Miss Dorothy Dean
Indiana	Miss Adelaide L. McGarrett
Maryland	Miss Edith L. Nyman
Massachusetts	Miss Constance K. Greene
Michigan	Miss Marcia Shaw
Minnesota	Miss Sara Kollman
New York	Mr. A. Garman Dingwall
Ohio	Miss Adelaide Fowler & Miss Ruth Pratt
Pennsylvania	Mr. S. Paul Campbell
Western New York	Mrs. Mary Jones
Wisconsin	Miss Leila R. Aanrud

Twenty-four chapters had replied to our invitation to send in specific problems. These were discussed one by one in round table fashion. Consequently, there was quite an exchange of ideas and suggestions.

Arrangements have been made by your chairman with the Editor of the REVIEW, so that in forthcoming issues this committee will have space for its activities. Because all chapters were not represented, the discussions of October 23rd will be elaborated upon in this column in future issues, and chapters will be asked from time to time to contribute.

Submitted by:
(MRS.) MARGERY L. WAGNER
Chapter Relations Chairman

Rosenberg Foundation

The Rosenberg Foundation of California is granting $15,000 for scholarships and publicity in physical therapy and occupational therapy in California. Although this is a local project, it is of national significance as a precedent to be encouraged in other communities. A chapter investigating its local resources might do well to use California's example as a chapter relations project.

History of the Rosenberg Foundation's Grant

The School of Physical Therapy of the University of California and the School of Occupational Therapy at the San Jose State College coincidentally applied for scholarship funds to the Rosenberg Foundation, a local private fund largely devoted to educational interests. Upon investigation of these two applications the Rosenberg Foundation decided it would be interested in encouraging a joint effort to secure students to decrease the manpower shortage in both fields. It is not only interested in the procurement of students but also in the coordination of physical and occupational therapy as part of an integrated program of rehabilitation.

Thereupon, impressed by the war need, the Rosenberg Foundation contacted not only the two schools which had applied for grants but also the occupational and physical therapy associations and the Bureau of Vocational Rehabilitation of California.

From this group was originated the Joint Occupational Therapy and Physical Therapy Committee and to this Joint Committee the sum of $10,000 for scholarships and $5,000 for publicity was granted.

The Grant

The grant is the "grant and aid type." The $10,000 for scholarships are for the seven California schools approved or set up for approval by the Council on Medical Education and Hospitals of the American Medical Association. The physical therapy schools are: The University of California, Leland Stanford University, the College of Medical Evangelists, and Children's Hospital, Los Angeles. The occupational therapy schools are Mills College, San Jose State College, and University of Southern California. Although the scholarships are for California schools, student applications may be global.

Recognizing that we have adequate schools and not enough pupils, $5,000 was granted for publicity to obtain pupils.

The Committee

The Committee appointed by the Rosenberg Foundation has the following personnel: Catherine Worthingham (Chairman): President, American Physiotherapy Association; Technical Director, Stanford University Physical Therapy Course; Frances Baker, M.D., Director, University of California Physical Therapy Courses; Mrs. Margery Wagner, President, California Chapter, American Physiotherapy Association; Dr. Marques E. Reitzel, Chairman, Committee on Occupational Therapy Courses, San Jose State College; Mary Louise Lawler, President, Northern California Occupational Therapy Association;

Mrs. Susan Richards, in charge of Occupational Therapy Courses, San Jose State College; Harry D. Hicker, Chief of Bureau of Vocational Rehabilitation, State of California.

Publicity

The publicity was put in the hands of a professional advertising company, the Long Advertising Company of San Jose. Experience has shown that when funds are available a professional advertising agency handles publicity more effectively than we can. No publicity has been released without approval of the Committee and has been under advice from the Relations Chairman of the American Physiotherapy Association and the American Occupational Therapy Association.

An attractive pictorial folder describes the two professions outlining their scope, educational requirements and opportunities in war and postwar rehabilitation; in military and civilian life; in private and public health programs. Copies of the folder will be sent to any Chapter upon request. This folder with a special letter of explanation has been sent to vocational guidance departments of all high schools, junior colleges, colleges, and universities in the State of California. The folder and a letter directed to them was sent to all physical therapists and occupational therapists in the state. Advertisements have been inserted in newspapers throughout the state and local magazines, educational journals, P.T.A. magazines, etc. These advertisements have coupon attached and the folder is sent to the applicant with an explanatory letter. Special attention has been directed to rural newspapers. Radio spot announcements, interviews, and talks are given daily over one or more networks. Cards to the broadcasting station brings the folder. The Long Advertising Service handles the mail for the Joint Committee. The address, 219 Fitzhugh Building, was used so that the applicants would not go to any one school and because it is a medical address. All applications for scholarships are considered by the Joint Committee after the school has accepted them. The folder directs the prospects to apply directly to the school of their choice.

In the opinion of your Relations Chairman this is an interesting project. Besides helping to answer the problem of manpower shortage it emphasizes our relation to the whole program of rehabilitation. It points out our close relationship to occupational therapy and for the first time in history every day it is dinned into the ears of the great listening public of the Pacific Coast not only what physical therapy is but that it is a great and glorious profession to which sentiment I heartily agree.

HAZEL E. FURSCOTT
American Physiotherapy Association
Chairman, Relations Committee

Pennsylvania Academy of Physical Medicine

The Pennsylvania Academy of Physical Medicine held a meeting in Philadelphia on October 19, 1943. The following papers were presented: "Rehabilitation of War Injuries" by Major Spencer T. Snedaker, M.C., U.S.A.; "Physical Therapy and Rapid Rehabilitation" by Capt. William Tipton, M.C., U.S.A., and "Wartime Physical Reconstruction" by Frank Krusen, M. D., Mayo Clinic.

New England Society of Physical Medicine

The New England Society of Physical Medicine held a meeting in Boston on November 17, 1943. Harry Eaton Stewart, M.D., spoke on "Fundamentals in Teaching Galvanic Technic," and Wilmont L. Marden, M. D., gave an address on "Ionization."

The Surgeon General of the Army Announces the following promotions of Medical Department Physical Therapy Aides to the grade of First Lieutenant:

Name	Serial No.	
Abel, Alice Anne	M-593	Bushnell Gen. Hosp., Brigham City, Utah
Alt, Margaret	M-458	Letterman Gen. Hosp., San Francisco, Calif.
Amrhein, Ila Jane	M-553	Station Hospital, Aberdeen Proving Ground, Md.
Anderson, Esther	M-440	Billings Gen. Hosp., Ft. Benj. Harrison, Ind.
Andrews, Mildred F.	M-573	Sta. Hosp., MacDill Field, Tampa, Fla.
Anstay, B. Helen	M-503	Borden Gen. Hosp., Chickasha, Okla.
Armanda, Rose M.	M-578	Sta. Hosp., Ft. McClelland, Ala.
Bacharach, Mary	M-423	LaGarde Gen. Hosp., New Orleans, La.
Baum, Inez Irene	M-443	Fitzsimons Gen. Hosp., Denver, Colo.
BenDure, Mary	M-548	Valley Forge Gen. Hosp., Phoenixville, Pa.
Brussell, Helen	M-476	Sta. Hosp., Ft. Monmouth, N. J.
Buehler, Vida	M-622	Torney Gen. Hosp., Palm Springs, Calif.

Campbell, Enola A.	M-464	Sta. Hosp., Ft. Lewis, Washington
Cassady, Nancy	M-525	Sta. Hosp., Ft. Leonard Wood, Mo.
Castleman, Mary L.	M-594	Sta. Hosp., Pine Camp, N. Y.
Christman, Louise	M-415	Hoff Gen. Hosp., Santa Barbara, Calif.
Clark, Felie	M-480	Lawson Gen. Hosp., Atlanta, Ga.
Clark, Marjorie L.	M-419	Sta. Hosp., Cp. Barkeley, Tex.
Cortelyou, Ruth Hays	M-649	Sta. Hosp., Ft. Dix, N. J.
Crimmins, Charlotte	M-549	Sta. Hosp., Cp. Roberts, Calif.
Daniels, Alice	M-425	Sta. Hosp., Cp. Livingston, La.
Davenport, Carolyn	M-465	Sta. Hosp., Cp. Shelby, Miss.
Ebinger, Pearl	M-497	Sta. Hosp., Cp. Rucker, Ala.
Fairbanks, Emily	M-580	Sta. Hosp., Cp. Blanding, Fla.
Fogelholm, Vera I.	M-505	Sta. Hosp., Ft. Banks, Mass.
Gibson, Catherine	M-520	Sta. Hosp., Ft. Ord, California
Greenwood, Virginia	M-522	Lovell Gen. Hosp., Ft. Devens, Mass.
Harr, Emma T.	M-541	Walter Reed Gen. Hosp., Washington, D. C.
Haskell, Mary	M-595	Moore Gen. Hosp., Swannanoa, S. C.
Hatfield, Glenora	M-441	Brooke Gen. Hosp., Ft. Sam Houston, Tex.
Haworth, Anne	M-454	Barnes Gen. Hosp., Vancouver Barracks, Wash.
Hermann, Helen L.	M-468	Halloran Gen. Hosp., Staten Island, N. Y.
Jakubzak, Charlotte	M-472	Sta. Hosp., Ft. Sill, Oklahoma
Jones, Elizabeth C.	M-524	Stark Gen. Hosp., Charleston, S. C.
Joyce, Alma Marie	M-446	Sta. Hosp., Cp. Wallace, Texas
Kuehler, Lydia W.	M-572	Sta. Hosp., Cp. Adair, Oregon
Lawson, Ruth E.	M-479	Sta. Hosp., Cp. Pickett, Virginia
Lee, Harriet Shannon	M-466	Fitzsimons Gen. Hosp., Denver, Colo.
Lomasney, Kathleen	M-576	Nichols Gen. Hosp., Louisville, Kentucky
McConnell, Amy B.	M-509	Sta. Hosp., Cp. McCoy, Wisconsin
Marabain, Lucy P.	M-409	Sta. Hosp., Truax Field, Wis.
Marshall, Eleanor	M-442	Sta. Hosp., New Orleans Port of Embarkation
Martin, Tressie M.	M-496	Sta. Hosp., AAB, Lincoln, Nebraska
Munroe, Jeanette	M-625	Sta. Hosp., Cp. Carson, Colorado
Northrup, Barbara	M-517	Tilton Gen. Hosp., Fort Dix, N. J.
Parsons, Virginia	M-469	Sta. Hosp., Camp Callan, Calif.
Ransom, Lois	M-559	Billings Gen. Hosp., Ft. Benj. Harrison, Ind.
Rhodes, Margaret	M-615	Percy Jones Gen. Hosp., Battle Creek, Mich.
Robbins, Katharine	M-481	Sta. Hosp., Keesler Fld., Miss.
Saxton, Lois	M-427	Sta. Hosp., Ft. Bliss, Tex.
Schmidt, Harriet	M-629	Sta. Hosp., Ft. Riley, Kansas
Schoenherr, Hermina	M-474	Sta. Hosp., Mitchell Fld., New York
Scott, Atha Lea	M-501	McCloskey Gen. Hosp., Temple, Texas
Shorey, Mary	M-651	Winter Gen. Hosp., Topeka, Kansas
Snyder, Agnes P.	M-445	Army & Navy Gen. Hosp., Hot Springs, Ark.
Stegkemper, Lois	M-631	Sta. Hosp., Cp. Hale, Colo.
Stoner, Mary	M-596	Sta. Hosp., Cp. Chaffee, Ark.
Taylor, Ann M.	M-532	Kennedy Gen. Hosp., Memphis, Tenn.
Theilmann, Ethel	M-460	O'Reilly Gen. Hosp., Springfield, Mo.
Thompson, Iola	M-432	Hammond Gen. Hosp., Modesto, Calif.
Tibbetts, Barbara	M-533	Sta. Hosp., Cp. Edwards, Mass.
Wallace, Catherine	M-552	Surgeon General's Office, Washington, D. C.
Warner, Julia	M-473	Sta. Hosp., Cp. Maxey, Tex.
Wells, Margaret	M-588	Sta. Hosp., Cp. White, Oregon
Westfall, Eleanor	M-433	Deshon Gen. Hosp., Butler, Pa.
White, Louise	M-453	Harmon Gen. Hosp., Longview, Tex.
Whitehurst, Margaret	M-534	Sta. Hosp., Ft. Bragg, N. C.
Williams, Anita	M-535	William Beaumont Gen. Hosp., El Paso, Tex.

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Short Wave Diathermy

Short-Wave Treatment. L. SCHMIDT, M. D. J. Chart. Soc. M. and M. Gym., Oct. 1943.

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ABSTRACTS

John S. Coulter, M.D.

Neuronitis: Differentiation From Poliomyelitis

A. L. Sahs, M. D., and W. D. Paul, M. D., Iowa City, Iowa. In ARCHIVES OF PHYSICAL THERAPY, Vol. XXIV, No. 7, July 1943.

The introduction of the Kenny treatment has kindled new interest in the subject of poliomyelitis. The objective of this paper is not to evaluate the merits of this type of therapy, but to call attention to the necessity of differentiating poliomyelitis from a type of multiple neuritis which, for want of a better term, has sometimes been referred to as "neuronitis." At times the two disorders resemble each other so closely that only careful study will differentiate them. In fact, enthusiasm for one's favorite method of therapy of poliomyelitis might be moderated by the knowledge that if a severely paralyzed patient makes a spectacular recovery in the course of two or three months, he probably was suffering from neuronitis instead of infantile paralysis, provided his disorder was of an organic nature.

Neuronitis was described by Osler, in 1899, as "acute febrile polyneuritis." Buzzard recorded a number of cases under the heading of "acute toxic polyneuritis" in 1907, and, in the following year, Laurans discussed the occurrence of facial diplegia in the course of "infectious polyneuritis." Guillain, Barré and Strohl are credited with the discovery that there is an increased protein content of the spinal fluid without pleocytosis. Hence, this condition is sometimes known as the "Guillain-Barré syndrome." The predominant characteristics of neuronitis, as described by these authors, include motor paralysis, loss of tendon jerks, preservation of cutaneous reflexes, paresthesias with slight disturbance of objective sensibility, tenderness, albuminocytologic dissociation of the spinal fluid, and ultimate recovery.

Summary and Conclusions

The importance of recognizing neuronitis has been emphasized because this condition might be easily confused with poliomyelitis. Neuronitis is a nonseasonal, nonepidemic disorder which attacks persons of all ages but is most common in the age group of 20 to 30. Half of the patients give a history of a mild infection previous to the onset of the paralysis. This type of polyneuritis is characterized by the onset of weakness or paralysis usually in the lower extremities and then extending to the upper extremities. The involvement is bilateral and symmetric, and the proximal groups of muscles usually are affected more severely than the distal ones. The deep reflexes are symmetrically depressed, or become absent, early in the course of the disorder, but sensory changes are slight by comparison. The cranial nerves, especially the seventh, are involved in approximately half the patients. The spinal fluid shows an increased protein content, without pleocytosis. Severe bulborespiratory complications may result in death; they accounted for the six fatalities in this series.

The results of the Kenny treatment of neuronitis are evaluated.

Relationship Between Vitamin B Complex Intake and Work Output in Trained Subjects

Clifford J. Barborka, M. D., Eliot E. Foltz, M. D., and Andrew C. Ivy, M. D., Chicago. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 122:-11:717, July 10, 1943.

Factual evidence that is slowly being accumulated both in this country and in Canada, although it is as yet meager, shows that nutritional deficiency disease prevails in many parts of the country. Sebrell believes that it is no exaggeration to say that at least one-third of the American population is eating a diet which is not adequate in all respects. Basing our judgment on the requirements which modern nutritionists consider as optimum nutrition, not mere adequacy, we believe that widespread improvement in health is possible.

The authors found no influence on recovery from fatigue or increase in muscular efficiency by parenteral injections of vitamin concentrates in any person already on an adequate diet.

Such evidence demonstrates the fact that vitamin B complex supplementation added to an already adequate diet has no influence on work output, recovery or other manifestations of physical exertion.

Difficult muscular effort such as the civilian, industrial or Army worker must exert, with consequent greater combustion of carbohydrate, should lead to a greater requirement of vitamins. The use of natural foods to bring inadequate diets to the required level is the ideal solution of the problem. Until this plan shall have become workable, discriminate vitamin administration to the civilian or industrial worker on an inadequate diet is a sound policy.

The authors conclude that:

1. Diets deficient in vitamin B complex in trained subjects decrease work output.

2. Early mild states of malnutrition, with no objective evidence of deficiency disease, do prevent maximal work efficiency.

3. Diets with about one-third (0.65 mg. of thiamine and 0.94 mg. of riboflavin) of the vitamin B complex of the recommended daily requirement do produce subjective symptoms of easy fatigue, irritability, lack of pep, anorexia and increased leg pain during work periods, in spite of the fact that no objective evidence of deficiency disease is present.

4. The ratio of blood pyruvic acid to the total work output increases proportionately as diet deficiency progresses.

5. Subjective symptoms of fatigue, irritability, lack of pep, anorexia and leg pains all disappeared and work output returned to normal or better within a few days following the supplementation of vitamin B complex.

6. Vitamin B complex supplementation added to a vitamin B complex inadequate diet restores work output to efficient levels.

Injuries Associated with Sport

Lt.-Col. St. J. D. Buxton, M.B., B.S., F.R.C.S., Senior Orthopedic Surgeon to King's College Hospital; lately Consulting Surgeon (Orthopedic) to Middle East Forces. In PRACTITIONER, CLI: 2:96, August 1943.

The Elbow.—Tears of the origin of extensor muscles from the external epicondyle of the humerus, one type of tennis elbow, are rare in the young soldier.

Falls on the outstretched hand may cause injury to the head of the radius. This is usually limited to a fissured fracture, or separation of a small piece of bone and overlying articular cartilage from the rim of the radial head.

Treatment of the fissured fracture consists in rest with the elbow in a flexed and supinated position. This is carried out by a "collar-and-cuff" or a special type of sling; the former is usually made by using a 3-inch flannel bandage.

This position is retained for three weeks, the patient being instructed to move the fingers and thumb. During the fourth week, the elbow is in a sling at a right angle and is then set free and the elbow exercised by active movements and some employment. No massage or other form of physical therapy is required.

The Internal Lateral Ligament. The most common tear is from the medial border of the tibia just below the joint level.

Treatment consists in the application of a pressure bandage (alternating layers of good cotton-wool and a wide firm bandage) around the joint and as little as possible around the quadriceps and the leg. The patient rests for two days, taking care that pillows are arranged to keep the limb extended (i.e., with no flexion of the knee), and then walks. Quadriceps exercises are essential and faradism may be employed. The inner side of the heel of a soldier's boot should be wedged ¼ of an inch. There is no objection to aspiration of the knee joint, and this appears to be more valuable if employed three or four days after the injury, than immediately.

The bandage must be kept tight, and the quadriceps prevented from wasting. As soon as local tenderness and most of the effusion have disappeared, graduated exercises must be carried out, not once a day, but several times.

The Internal Semilunar Cartilage is torn when there is a rotation strain of a flexed knee joint.

Treatment. In the soldier, the treatment is operative. In civil practice, it is usual to advise operation when there have been two or more lockings, but not necessarily after one locking only. The operation should be delayed if there is quadriceps wasting, until efficiency of these muscles exists. Different types of after-treatment are used, some surgeons getting the patient up a day or two after operation and others delaying this step for two to three weeks. All are agreed that the quadriceps must be kept active and graduated exercises instituted early. Increasing activity of the muscles is essential, and the soldier should be under the direction of a physical training instructor for three weeks prior to return to duty. Experience is showing that only between 70 and 85 per cent of the operation cases return to full duty after operations on the knee, owing to weakness of the joint, recurrent joint effusion, or reappearance of symptoms.

External Semilunar Cartilage injuries are less common than those of the inner meniscus.. The treatment is operative.

The Ankle.—Sprained ankle is a common accident. Early treatment limits the length of the convalescence. A sticky felt pad is placed over the site of the injury and firm pressure is applied with elastoplast, bandaged figure of eight around the metatarsal area of the foot and the ankle. The patient should keep the foot up for forty-eight hours and then walk on it. The elastoplast requires changing at a weeks' interval and must be kept on for three weeks. Another week's light duty is required.

If there is delay in treatment, effusion is likely to persist, accompanied by pain and a weak ankle. Heat and massage seldom benefit the patient so much as firm elastoplast bandaging, but return to duty may be delayed for six to eight weeks, from the time of injury.

Oral and Rectal Temperatures After Exercise

Editorial. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 123:2:96, Sept. 11, 1943.

Recently Brennemann reported the recording of the rectal and oral temperatures just before and just after various degrees of exercises in 10 children and 3 adults, all apparently in sound health. The rectal temperatures rose from 1 to 4 degrees F. higher after exercise while oral temperatures remained relatively unchanged, rose only slightly or even dropped. The increase in rectal temperatures and hence the variation from the oral was directly proportional to the intensity of the exercise. Normal temperatures both by rectum and by mouth were resumed in from thirty to sixty minutes. The clinical implications are obvious: a high afternoon or postexercise rectal temperature in a child cannot be presumed to reflect a disease process and conversely the danger of such a high temperature masking a disease process should not be overlooked.

War-Time Decline of Acute Rheumatism

J. Alison Glover, M. D., Temporary Medical Officer (Late Senior Medical Officer), Board of Education, London. In THE LANCET, No. 6254, Vol. CCXLV, July 10, 1943.

Generally the health of the nation, despite increases in certain diseases, has well withstood the strain of three and a half years of war, and seems almost better than usual. Even against this background, the behavior of acute rheumatism is outstanding. While its severity and (less certainly) its incidence had been steadily declining for many years before the war, yet since the war its gradual decline has greatly accelerated—its death-rate has been halved, in-patients are much reduced in number, and a general impression has been received of lessened incidence and clinical severity alike of rheumatic fever, carditis, and chorea.

Possible Causes of the Decline

The decrease in poverty caused by abundant employment during war-time, the greatly increased provision of milk for all children and of solid meals for schoolchildren, the long "changes of air" due to evacuation which have tended to decrease urbanization, these are all possible factors in the suddenly accelerating decline. The first is probably the most important of the three.

Refrigeration Anesthesia in Amputations

Harry E. Mock, M. D., Chicago, and Lieutenant Harry E. Mock, Jr., Medical Corps, Army of the United States. In J.A.M.A., 123:1:13, Sept. 4, 1943.

This article comprises a critical analysis of the literature on refrigeration anesthesia for amputation based on personal experience. To the 101 cases reported by Allen, Crossman and others, the authors add observations on 17 cases of their own, eight amputations for peripheral vascular disease and nine amputations for trauma.

By refrigeration is meant the chilling of tissues—not freezing. Freezing damages tissues as in frostbite; refrigeration does not. Water freezes at O. degrees C. (32 F.). Blood and tissues freeze at a slightly lower level. Refrigerating a limb with cracked ice or ice water lowers the temperature to somewhere between 0.5 and 5 above freezing. With a mechanical device the exact degree of refrigeration may be controlled. Hence there is a definite margin of safety. In no instance have we seen the tissues damaged.

In an effort to determine the exact temperatures deep in the tissue in various locations of the refrigerated extremity, with and without the use of a tourniquet, internal temperature measurements have been made in two most recent amputation cases. Dr. S. L. Osborne of the Physiology Department of the Northwestern University Medical School made these readings with an L. & N. potentiometer, hypodermic type No. 1, Thermocouple.

In the authors' experience a slight delay in healing has been the only disadvantage encountered when refrigeration anesthesia is used for amputations. Its advantages are many to overcome this objection. Postoperatively there is no pain; none of their patients have required an analgesic. There no shock or other reaction to what is commonly considered a rather shocking operation; the blood pressure, pulse and respiration show no change during or after the operation. It permits surgery to be performed in what formerly were hopeless cases because of debility or septicemia. It lowers the incidence of stump infections in those limbs requiring amputation because of infection. It is of especially great value for diabetic patients when the absence of any postoperative reaction allows the patient to carry on without missing a meal. The diet and insulin dosage do not have to be juggled.

In severe crushing injuries of an extremity or other injuries with complications necessitating amputation, refrigeration will inhibit infection and limit the absorption of histotoxins, thus helping to overcome shock, and will give time for infusions of plasma, blood or fluids and other necessary preparatory measures. With refrigeration the amputation may be delayed until the threatening associated injuries or complications have been conquered. Finally, under refrigeration anesthesia the extremity may be amputated at the selected site without further shocking the patient.

The Motor Complications of Herpes Zoster

John H. Taterka, M. D., and Mary E. O'Sullivan, M. D., New York. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 122:11:737, July 10, 1943.

Motor disturbances in cases of herpes zoster are rarely observed. The authors collected from the literature 42 cases of herpes zoster with motor complications. An analysis of these, including their own two cases, shows the following: The proportion of males to females is almost 3:1. The age of the patients is not different from that of patients with uncomplicated zoster. Paralysis of muscles of the upper extremity occurred in 20 patients, or 45.5 per cent of the cases. In the majority of these the deltoid muscle is affected.

The trunk muscles are affected in 18 cases, or 40.9 per cent. There are only 6 cases involving the muscles of the lower extremity. The zoster eruption precedes the paralysis in about three-fourths of the cases. The time interval between the eruption of the herpes zoster and the appearance of the paralysis varies from one day to two months.

In 100 per cent of the cases the cutaneous eruption and muscular involvement occur in the same side of the body. In about nine-tenths of the cases the cutaneous eruption and the muscular weakness exists in the same segmental distribution. In 18.8 per cent of the cases the electrical reactions were normal, and in 81.2 per cent there was a diminished response or a reaction of degeneration.

Fibrillary twitchings occasionally are observed in zoster of the geniculate ganglion with involvement of the facial nerve. Sixteen per cent of the patients recover with no residual abnormalities. The time required for complete recovery usually is one-half to one

year, and in only a few cases is it less than two to three months.

Of the patients 81.7 per cent did not recover fully. Some atrophy and muscular weakness persisted when treatment was discontinued after one year or more.

Summary

An analysis of 44 cases shows that the pareses do not necessarily coincide with the herpetic eruption in localization and extension. The time interval between the cutaneous eruption and the appearance of the paralysis (or vice versa) may range from one day to two months.

The pathologic changes show a multitude of lesions, with the dorsal root ganglion the most frequently diseased part.

Insect Vectors of Poliomyelitis

Editorials. IN THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 122:18:1250, August 28, 1943.

In 1931, following a shift of clinical interest to the possibility that human feces and sewage might be the main sources of infection, insect vectors again became of logical interest. Methods of detecting poliomyelitis virus in stools and sewage have been greatly improved since that time, the most important improvement being the substitution of highly susceptible Java monkeys (cynomolgus) for the more resistant rhesus and green African monkeys formerly used for experimentation. Adapting these newer methods, three groups of investigators reported positive results with fieldflies collected in epidemic areas. A detailed account of the results obtained by one of these groups is currently reported by the late Dr. James D. Trask and his colleagues of the Department of Pediatrics of Yale University.

Trask's positive results were all from fly samples collected near a potential (though not proved) source of virus in the form of "exposed" human feces of recent origin. The Yale investigators, however, warn against reading an epidemiologic implication into their results, since the presence of virus in their positive samples might be merely a "resultant" and not a "causal factor" in the local epidemic. Whether or not the virus can multiply on or within the contaminated flies has not yet been determined.

The Influence of Pregnancy on the Location of The Center of Gravity, Postural Stability, and Body Alignment

Corinne Fries, M.S., and F. A. Hellebrandt, M.D., Madison, Wisconsin (From the Department of Physiology, University of Wisconsin). In AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY, 46:3:374, September 1943.

One of the most rigorous demands made upon the human postural mechanics is that of pregnancy. For a period of 280 days this woman carries a steadily increasing load which at term averages, in totum, including uterus and ovum, 4 to 6 kilos (pounds 10-14). Mechanically, this load could scarcely be placed more disadvantageously.

Summary

1. The anteriorly unbalancing load of pregnancy causes a temporary overcompensation which displaces backward, the average location of the vertical projection of the center of gravity in the sagittal plane.

2. Pregnancy appears to be associated with no alteration in the subjects's normal simistral asymmetry of stance.

3. The multijointed segmented body counterbalances the disequilibrating effects of pregnancy by elevation of head, hyperextension of the cervical spine and extension of the knee and ankle joints. Relatively slight visible adjustments occur in the lumbar spine.

4. There is an apparent significant decrease in postural stability which persists throughout the puerperium.

5. Since the alignment at the end of puerperium is an almost exact duplication of that assumed in the early months of pregnancy, the gravida has successfully resisted the chronic disrupting force without any significantly permanent change in the postural mechanism.

Treatment of Psoriasis

L. A. Brunsting. In MICHIGAN STATE MEDICAL SOCIETY JOURNAL, 42:497-576, July 1943.

The method recommended by Brunsting is the combined use of crude coal tar by inunction and of ultraviolet irradiation, a procedure first elaborated by Goeckerman. Crude coal tar ointment in a strength of from 2 to 6 per cent is used generally, excepting on the scalp and nails, where an ointment containing from 10 to 20 per cent ammoniated mercury is used. The patient is thoroughly bathed with soap and water to soften and facilitate removal of the scales. The trunk and extremities are thoroughly annointed with the tar ointment and suitable clothing is provided, such as loosely fitted underwear, pajamas or a covering of gauze. At bedtime additional ointment is applied to the body and scalp when needed. The next morning the tar ointment is smoothed with an oil to the consistency of a thin film over the entire body. Ultraviolet irradiation is carried out daily in increasing dosages. It is desirable to secure a brisk erythema short of a burn. Infiltrated plaques and the scalp may be subjected to more intensive treatment by protection of the surrounding skin by paper or cloth, but it is essential to irradiate the entire surface of the body. After the ultraviolet treatment a bath and shampoo again are in order and the ointments are reapplied. A considerable proportion of psoriatic persons also are subject to arthritis. The most common site of involvement in the early stages is the terminal phalanges of the fingers or toes; gradually the larger joints may become involved, even the spinal column, and when the disease is advanced the picture may resemble that of arthritis deformans. The treatment of psoriatic arthritis depends upon prompt recognition and thorough control of the psorasis by the use of crude coal tar and ultraviolet rays. The affected joints are treated as in other forms of arthritis.

Exercise in the Child with Rheumatic Heart Disease

George Eisenberg. In PROC. INST. MED., Vol. 14, No. 16, Oct. 15, 1943.

The child with rheumatic heart disease whose infection is quiescent is usually unnecessarily limited in exercise. This unwarranted caution undoubtedly stems from proven therapy for active rheumatic infection in children. But after recovery from active infection many children with normal sized or moderately enlarged hearts, with mitral or mitral and aortic regurgitation, are never permitted as much activity as they might reasonably undertake without harm.

The material for this paper was collected from yearly reports covering twenty years of observations on cardiac children at Sunset Camp. Sound evidence has been accumulated that most of the cardiac children have been too sharply limited in exercise. It is more logical to allow the child with inactive rheumatic heart disease to determine for us, within reasonable limits, his tolerance for exercise than to impose strict limitations upon his activities. Each child seeks or reaches that level of play which is comfortable and gratifying. The real danger to the child with rheumatic heart disease is recurrent infection, not play or exercise.

Treatment of the Injured Workman

H. E. Griffiths, M. S. Lond, F. R. C. S., Surgeon to the Albert Dock Hospital, London. In LANCET, 1:24:6250, June 12 1943.

The treatment of the injured workman should not differ in any material way from that afforded to any other member of the community; but when the manual worker is selected as a type the principles underlying treatment are perhaps made easier to understand.

The object of treatment is to effect a cure—that is, to obliterate altogether from the mind and body of the patient the effects of the injury sustained. Since in the human body repair does not occur without the formation of scar, 100 per cent anatomical and physiological recovery is not possible and some standard short of that must perforce be accepted. In my opinion the best results can be obtained by accepting the restoration of full working capacity as the criterion of recovery.

Injury precipitates a man down the ladder of power. The surgeon, taking the man at the level at which he finds him, must help him step by step upwards to full rehabilitation.

The aim of treatment is to restore power, not only to the injured part but to the whole body. The restoration of power can only be achieved by exercises which in turn produce a flow of "more and better" blood and hastens tissue repair. But the flow of blood must be regular and not in fits and starts, so that exercises must be prolonged throughout the hours of the ordinary working day instead of for half an hour three times a week.

In order to make such exercise possible without induction of fatigue, the exercises should be based upon established reflex action: at first the fundamental reflexes, then the conditioned reflexes, and finally impulsive action.

In the patient psychological effort must be reduced to a minimum because this effort produces fatigue at a stage much earlier than it would otherwise occur. Normality (i.e. the use of conditioned reflexes) must be encouraged. Normal working boots should be worn and sticks and crutches disallowed. Bad habits of grasp and grip and gait are prevented or corrected by leading the patient back step by step up through his reflexes.

All this requires great psychological effort, but this effort must be made by the surgeon on behalf of his patients; and for him, like them, "getting fit is a whole time job."

Five Hundred Cases of Myalgia in the Army

Captain Michael Good, M.D., Royal Army Medical Corps. In JOURNAL OF THE ROYAL ARMY MEDICAL CORPS, LXXX:5:237, May 1943.

Judging by textbooks, muscular diseases are very uncommon. But this is hardly in harmony with the fact that the musculature—the so-called active locomotor apparatus—is the largest organ in the body. According to MacKenzie (1930) the animal body contains not less than 434 muscles, which constitute about 45 per cent of the total weight. Moreover the musculature contains about one-third of the total blood (McDowell, 1938). Further one has to bear in mind that the muscles are subject for the greater part of the day to wear and tear to a great extent. From a purely theoretical point of view the muscles must be expected to be subjected to frequent disease.

I submit that muscular diseases are very frequent indeed.

Myalgia is a very frequent disease localized in certain anatomical parts of one or more muscles. Its characteristic features are "myalgic spots" which can be located by objective criteria and give rise to referred or heterotopic pain. Myalgia is present in and responsible for the vast majority—according to statistics 95 per cent—of patients suffering from rheumatism; it is not rarely associated with rheumatoid arthritis, osteoarthritis and commonly with rheumatic fever. The malady is also responsible for a number of minor diseases which can be traced to an injury—traumatic myalgia. It often is of unknown origin—idopathic myaliga—and mimics visceral and nervous diseases, heart pain, neuralgia, sciatica, syndrome of painful feet, etc. The localization of the myalgic spots—the characteristic feature of myalgias—of neck, shoulder, arm, back, lumbar region, hip and leg are described. Procaine injection into the accurately and objectively located myalgic areas is warmly recommended as relieving pain and other complaints in a most dramatic way and as leading to rapid cure. Based on the experiences made in the Army I put forward the claim that rheumatism is for practical purposes a curable disease.

Concepts of Muscle Dysfunction in Poliomyelitis: Based on Electromyographic Studies.

By Arthur L. Watkins, M.D., Mary A. B. Brazier, Ph. D., Boston, and Lieut.-Comdr. Robert S. Schwab, (MC), U.S.N.R. In J.A.M.A., 123:4:188, Sept. 25, 1943.

The importance of muscle "spasm" as a symptom of acute poliomyelitis has received emphasis since the Kenny concepts of the symptomatology and treatment of this disease have come into prominence. Muscular pain, tenderness and shortening have been recognized for many years as characteristic features of acute poliomyelitis and have been described by different authors, particularly by Lovett and by Ober, who have advocated treatment with local heat in the form of hot fomentations and by gentle passive movements followed by active muscular reeducation. In recent studies of "spasm," Schwartz and his associates have recorded electrical potentials from muscles in cases of acute poliomyelitis with a cathode ray oscillograph and found widespread hyperirritability to stretching, not only in muscles which appeared to be in "spasm," but also in their antagonists and in those clinically unaffected.

In order further to elucidate these concepts of muscle "spasm," "mental alienation" and "incoordination" a study was made of the electrical discharges of muscles while at rest, during passive stretching and during voluntary contraction, both in the early and in the late stages of poliomyelitis.

Electromyograms were recorded by a standard ink-writing Grass electroencephalographic apparatus.

Eleven cases of poliomyelitis were studied in various stages of the disease process over a period of two years. The results were compared with recordings from normal controls, from patients with peripheral nerve injuries, including war wounds, from patients with infectious polyneuritis and from patients with muscle spasm secondary to fractures. The electrical activity of muscles was studied in positions of maximum relaxation, during passive stretching and during voluntary contraction. In some cases correlative studies were done of the electrical excitability as measured by voltage-capacity curves and of work performance as recorded by an ergograph.

The authors conclude:

1. In poliomyelitis the term "muscle spasm" is inadequate to describe the complexity of dysfunction which is revealed by electromyography.

2. In the acute stage, only muscles with some degree of paralysis discharge electrical potentials at rest; these electrical abnormalities are not correlated with the presence of clinical "spasm."

3. Partially paralyzed muscles are hyperirritable to passive stretching, as indicated by electrical discharges and pain; the muscle tension thus developed appears to be a reflex protective mechanism.

4. The electrical activity in paretic muscles at rest increases during the period of improving motor power, and the pattern of discharges corresponds with that seen in muscles during regeneration of peripheral nerves. When improvement in motor power ceases, spontaneous electrical discharges disappear.

5. No abnormal electrical activity is associated with the muscle contractures of the late stage of poliomyelitis, nor are any discharges present in completely paralyzed muscles.

6. The concept of "mental alienation" does not contribute to the explanation of paresis in our cases, since objective signs of a disease process were always present in the paretic antagonists of muscles in "spasm."

7. Increase of voltage of action potentials during successive ergographic tests is an index of recovery of motor power.

8. Of the three concepts of Kenny, the only one upheld by our objective measurements is that of "incoordination," although the term is misleading. We demonstrated not only simultaneous activation of protagonists and antagonists but also intermittent synchrony of individual discharges from opposing muscles, such as is found in peripheral nerve injuries during regeneration of axons. "Disordered reciprocal innervation" seems to be a more descriptive term for this type of dysfunction.

Contact, Contact-Infective and Infective-Allergic Dermatitis of the Hands: With Special Reference to Rubber Glove Dermatitis

John H. Stokes, M.D., Walter E. Lee, M.D., Philadelphia, and Harold M. Johnson, M.D., Honolulu, T. H. In J. A. M. A., 123:4:195, Sept. 25, 1943.

The best substitute for roentgen irradiation the authors have been able to find for "hand" cases is the nitrogen-mercury vapor tungsten electrode bulb designated as S_1 by manufacturers. The spectrum is said to approximate that of June sunlight, cut off by the glass at 2,800 angstroms. If no evidence of light sensitiveness exists, a sharp weekly exposure (ten to twenty minutes at 5 inches) has an excellent effect partly bactericidal, partly counterirritative, partly just plain "toughening." This technic is preferred to short, suberythema exposures at shorter intervals. The lamp must be used with caution on previously irradiated surfaces or where photosensitiveness may be suspected. Summer sunlight may have similar good effects. The short wave length (quartz) ultraviolet lamps are in our experience more irritative, less effective.

Irradiation Treatment of Some Common Skin Conditions

William Beaumont, M. R. C. S., L. R. C. P., Honorary Physician and Medical Director, Institute of Ray Therapy and Electrotherapy; Physician in Charge of Physiotherapy Department, Westminster Hospital. In BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE, 6:4:110, July-August 1943.

Conclusion

I would say that the claims made by some of the early enthusiastic advocates of ultraviolet irradiation have not been justified. Nevertheless there is no doubt that for some skin conditions local treatment is effective and that general irradiation is of great value for many.

Poliomyelitis and Pregnancy: With Special Reference to the Failure of Fetal Infection. (Two Hitherto Unreported Cases in One of Which the Human Fetal Spinal Cord was Examined for the Virus.

By Paul H. Harmon, Ph. D., M.D., Sayre, Penn., and Archibald Hoyne, M.D., Chicago. In J.A.M.A., 123:4:185, Sept. 25, 1943.

This report will add further evidence to the thesis that now appears to be well established: that pregnancy has little, if any, influence on the course of poliomyelitis in a paralyzed mother and, conversely, that in utero infection of the fetus occurs with rarity, if at all. The corollary that acute poliomyelitis in the mother has no effect on the fetus is questioned by one of our cases in which fetal death occurred in utero presumably as a result of asphyxia associated with faulty oxygenation of the maternal blood during the acute course of bulbar poliomyelitis. Several reports and studies of this question have been published which have established the two facts first mentioned almost beyond doubt. In one of the cases an opportunity was present to examine the fetal cord for virus. The results of this examination were negative which would add further evidence in favor of the contention that the virus of poliomyelitis, under the natural occurrence of these events simultaneously in man, does not pass from mother to child.

A second case demonstrated an outcome which is usual and to be expected in this complicated situation; i.e., apparently little or no effect by pregnancy on the extent of paralysis in the mother (?) and a viable, nonparalyzed fetus. This case and those previously reported in the literature would tend to demonstrate that cogenital poliomyelitis does not occur.

Immersion Foot

From Medical Progress. In CLINICAL JOURNAL, LXXII:4:162, July-August 1943.

In the *Army Medical Bulletin* "immersion foot" is defined as a condition produced by long immersion in cold water, usually associated with immobility of the limbs and constriction by boots or other clothing. In view of the large numbers of people set adrift on rafts and in lifeboats through the intensification of U-boat warfare, it constitutes a pressing problem. Three Canadian medical officers have reported observations on 142 cases, almost all from the North Atlantic. These had been adrift for periods varying from 30 hours to 32 days. The floorboards of most of the lifeboats were constantly awash with water several inches deep. Such water temperatures as were recorded ranged from 34 to 36 degrees F. Since the freezing-point of sea water is 28.5 degrees F, the affected feet must have been exposed, in many cases, to surface cooling at a temperature below 32 degrees F., the freezing-point of the blood.

On removal from the boats and rafts, the feet were found cold, swollen and waxy white in color, with scattered cyanotic areas. They were anesthetic to pain, touch and temperature. Patients complained that their feet felt heavy, "woody" and numb.

Away from the previous traumatic environment local swelling increased rapidly, and the feet became red, hyperemic, and hot without sweating. The pulse in the blood vessels was full and bounding. After about ten days patients complained of intense neuritic pains, while in severe cases varying degrees of gangrene appeared. Return of sensation and complete motor control was sometimes delayed for many weeks, and, in a few cases, pain was found to recur on exposure to cold and wet.

Stress is laid on the importance of lifting and carrying patients from the boats, on no account allowing them to walk. In the hospital the affected limbs were kept supported, while they were slowly warmed. Strict asepsis was maintained and care was taken to avoid the slightest trauma. During the hyperemic stage it was considered essential to avoid massage, and to keep the feet supported, slightly elevated, and exposed to the air. This exposure to cool, dry air, described as dry refrigeration, was successful in reducing tissue loss to a minimum.

Although the cases observed came from the North Atlantic, which is cold even in summer, the condition also may occur in subtropical waters, when exposure has continued for a long period.

Rehabilitation and Social Security

In LANCELOT, 2:8:227, August 21, 1943.

Assumption B of the Beveridge report covers not only medical treatment in all its forms but also what he calls "postmedical" rehabilitation—an unhappy term, for some measure of medical supervision is necessary right up to the point of full fitness for work. Beveridge puts forward the general propositions that rehabilitation must be continued till maximum earning capacity is restored, that a service for this purpose should be available for all disabled persons who can profit by it irrespective of the cause of disability, and that cash allowances to persons receiving rehabilitation should be the same as training benefit, including removal and lodging allowances where required. No reliable estimate has yet been made of the number of people likely to need rehabilitation, but from the Home Office statistics on workmen's compensation for 1938 it emerges that of every 100 compensated cases of disability arising from accident terminating during the year 3.6 had lasted for 26 weeks or more; while of every 100 cases of compensated industrial disease terminating during the year 17 had lasted for more than six months. The total number of cases in which compensation was paid under the Workmen's Compensation Act in that year was 459,223, equivalent to 5.82 per cent of the industrial population at risk. Similar figures are not available about incapacitating sickness among the insured population generally, but in Scotland, according to a report issued by the Department of Health, the average duration in days of terminated incapacities in 1936-37 among men of 30-49 was: tuberculosis, 650; diabetes, 189; anemia,

117; cardiac debility, 108; neurasthenia or neurosis, 188; "disordered action of the heart" and tachycardia, 124. The average duration of terminated incapacity from all causes among men of this age-group was 40 days. For older men the incapacities were always longer and for women they were no shorter, except in cases of anemia. It is obvious from these figures that there must be many patients who require rehabilitation before returning to work after long illness.

The report of the Tomlinson Committee has thrown into relief the importance of rehabilitation, and in the near future the government must give thought to the many problems that will arise from it—among them the organization of a rehabilitation service (comprehensive in scope and effectively linked with health services and with industry), the payment of allowances during rehabilitation, and the relationship of workmen's compensation to rehabilitation and subsequent return to work. These are all subjects on which there should be a considered professional opinion.

Physical Therapy in Psychiatric Practice

Winfred Overholser, M. D., Sc. D., Supt. of St. Elizabeths Hospital; Professor of Psychiatry, George Washington University School of Medicine, Washington, D. C. In J.A.M.A., 123:1:32, Sept. 4, 1943.

The interest of psychiatrists in physical therapy perhaps antedates that of any other medical specialty. As knowledge of the bodily factors in mental states has developed, the utilization of physical therapy in psychiatric practice has gained. In addition to the direct effect on various bodily organs and organ systems, however, an effect is exerted on the whole patient by anything which modifies his physical environment, whether this is within his body, on the surface of his body or in the world about him. It is these effects on the whole patient which are referred to as psychologic.

In psychiatric practice two general classifications of physical therapy may be made. One includes the types which are prescribed primarily on account of the total behavior of the patient, that is, on account of his mental condition; such are, for example, the continuous bath and the wet sheet pack for states involving tension, overactivity and restlessness, and the various forms of stimulative therapy, such as the contrast douche, the salt glow, the friction rub and ultraviolet therapy, which may be utilized in states of depression and decreased motor activity. In the second group are included numerous other forms of physical therapy which are useful even though they are directed toward systemic conditions or the conditions of particular organs. The latter group of modalities likewise has a beneficial effect on the mental state of the patient, although this effect may be referred to as in some ways a by-product.

Of the forms of physical therapy prescribed for primarily psychiatric reasons, the form which is by far the most commonly used is the continuous neutral bath. Next in point of frequency to the continuous bath is found the wet sheet pack.

Under the general heading of stimulative hydrotherapy the needle or circular type of douche is in common use. Saline baths are spoken of in the literature, but they are not used with any great generality.

An important form of physical therapy in mental hospitals is found in the use of the fever cabinet. Another form of physical therapy which is highly characteristic of mental hospitals and which indeed should not be employed outside of a hospital is the so-called electric shock therapy.

Some investigation of the effects of low temperature has been carried on in a few psychiatric centers but with doubious results.

Massage should be available for its local effects on disabled joints and muscles and for general relaxation as well.

Simple Methods for Performing Artificial Respiration

Ralph M. Waters, M.D., Madison, Wisc. In JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 123:9:559, Oct. 30, 1943.

Artificial means to replace the act of breathing need not be complicated or difficult. Any intelligent person, even a child, may be taught to perform artificial respiration which is adequate and safe.

Waters summarizes this article as follows: If a reasonably robust person ceases to breathe, adequate artificial respiration may sustain life until breathing is reestablished. Only disappointment can result from performing artificial respiration on persons who cease to breathe as a terminal event in the course of disease. Methods are most useful which are instantly available and simple.

1. When breathing has stopped, do not concern yourself with calling for help, moving the patient, wrapping him in blankets or any maneuver other than keeping up intermittent rhythmic exchange of the atmosphere in his lungs.

2. Utilize inflation of the victim's lungs from the lungs of the operator, or exchange by manual maneuver, if apparatus is not at hand.

3. If and when a mask, rubber bag and a cylinder of compressed oxygen are available, fill the bag with oxygen and inflate the lungs by pressing on the bag.

4. In either case (2 or 3) use only sufficient pressure to expand the chest slightly. If one can see or feel the chest begin to expand as one blows or presses on the bag, enough pressure is being used. The amount of pressure necessary may be great if the air passages are partially obstructed. Try to relieve such obstruction as soon as possible.

5. Allow adequate time for the lungs to empty until a physician has pronounced him dead.

6. Persist until the subject breathes for himself or until a physician has pronounced him dead.

7. If water or other substances are thought to be in the mouth, throat, and air passages, work with the patient in the face-down position with the head low if possible.

Treatment of Immersion Foot by Dry Cooling

C. C. Ungley, M.D., Durh, F. R. C. P., Surgeon Commander RNVR, at a Naval Hospital. In LANCET, 1:22:681, May 29, 1943.

Webster and his colleagues (1942) treated cases of immersion foot in the hyperemic stage by dry cooling. Cooling was achieved in one of three ways: (a) dry ice-bags were placed round each foot and changed every 4 hours or oftener if necessary, to reduce skin temperature by about 6 degrees; (b) the feet were fanned with air cooled by cold water sprayed from a nebulizer; (c) the feet were exposed to room temperature in a cool ward. Pains were relieved, and within 4 hours patients were comfortable. Edema usually subsided rapidly and contents of blebs were absorbed. In several cases impending gangrene was arrested. Too early removal of the icebags was followed by increasing edema and even extravasation of blood. These Canadian workers mentioned an apparatus under construction for maintaining uniform dry cold. Later, Greene (1942) described a "therapeutic refrigerator," remarking that he had no opportunity of trying it. The cabinet consists of an upper and lower compartment. The upper contains a tray for solid carbon dioxide. The lower has padded apertures for hands or feet. It contains a thermometer which registers at the back of the cabinet. Air circulates through two flues between the compartments. By opening and closing these flues the temperature of the lower compartment can be decreased or increased.

Since a previous report (Ungley and Blackwood 1942) an opportunity has arisen to try out methods of dry cooling in immersion foot in the hyperemic stage.

Physical Therapy Applied at Home for Arthritis: A Follow-up Study, with a Supplementary Summary of the Sedimentation Rate of Erythrocytes in Two Hundred and Twenty-Nine Cases of Arthritis

Jerome V. Treusch, M.D., and Frank H. Krusen, M.D., Rochester, Minn. In ARCHIVES OF INTERNAL MEDICINE, 72:2:231, August 1943.

A follow-up study was made in 218 cases of all types of arthritis in which home physical therapy was prescribed. Of these 218 cases, patients in 92.7 per cent carried out the prescribed treatments at home and in 64.7 per cent continued the treatments for three months or longer. Patients who received more than one instructional treatment were more likely to carry on the regimen at home with improvement than were those who had only one.

In approximately 4 out of 5 cases of arthritis, patients thought they were benefited by the use of home physical measures, and in 2 out of 5 they were definitely enthusiastic in their replies. In general, patients who had rheumatoid arthritis were more enthusiastic about the benefit received than were those who had osteoarthritis, but on rough analysis the beneficial results obtained by both groups were comparable.

Data on the sedimentation rates in 150 cases of rheumatoid arthritis and in 79 cases of osteoarthritis were presented.

Some Problems of Rehabilitation

Harold Balme, O.B.E., M.D., F.R.C.S., Emergency Medical Service. In BRITISH MEDICAL JOURNAL, No. 4305:47, July 10 1943.

Rehabilitation is defined as the method by which physiological and psychological function are fully restored after their temporary loss from injury or illness.

An organized system of rehabilitation should be regarded as an integral part of the treatment of all debilitating diseases and injuries.

It is essential that it should not be divorced from medical and surgical control, but such dissociation is liable to occur unless the problems are closely studied by the profession and a sound scheme is adopted by all hospital authorities.

As a guide to the formulation of such a scheme a list is suggested of subjects on which further research and statistical study are required.

A system by which patients undergoing rehabilitation are graded according to their stage of recovery is recommended.

The various groups which should constitute a rehabilitation team and the responsibility devolving on each are outlined.

The training of the rehabilitation staff and the provision of the facilities required by hospitals and by special rehabilitation centers are discussed.

The contribution of rehabilitation medical officer and of hospital social workers towards the resettlemnt of patients in industry is indicated.

Preventing Backstrain in Nursing

By Kathleen Newton, R. N. IN AMERICAN JOURNAL OF NURSING, October 1943.

Backstrain results from an imbalance between the functional capacity of the back and the demands made upon it. Normal balance must and will be maintained even at cost of injury to muscles and ligaments.

The problem of backstrain among nurses forcibly presents itself under the stress of wartime case loads. Backstrain, however, may be due to *how* work is done rather than *how much*.

Three factors stand out in combating backstrain. First, to maintain good general health and general body flexibility is essential and should be emphasized thoughout and beyond the nursing school period. A complete physical education program during undergraduate life and the establishment of habit patterns of exercise that will persist after graduation is important. Emphasis should be placed on outdoor exercise as few student nurses get sufficient fresh air for the maintenance of optimum health. Mental as well as physical stimulation outside nursing hours is necessary, for an alert, enthusiastic mind is essential to the maintenance of adequate muscular tone.

Second, the nurse should know the principles of

correct mechanics and apply them in her nursing activities. Every student should be educated in correct posture and should receive medical supervision until her posture habits are well established. There is nothing mysterious about body mechanics. A few simple rules such as "pushing the head up" go a long way toward improving general posture.

A third point is education of the patient. Some patients are unable to do anything for themselves; others are able and anxious to facilitate the work of the nurse, but do not know how to help effectively so that their attempts frequently result in more harm than good. In addition to aiding the nurse in her work, the teaching of posture and posture hygiene should have some personal value to the patient.

Backstrain among nurses is a common condition which is preventable in most instances. Prevention of backstrain depends upon maintenance of good general health, knowledge and application for essential basic principles of body mechanics, and careful education of the patient.

Autopsy Nerve Grafts in Peripheral Nerve Surgery: Clinical Application; "Glue" Suture Technic

Roland M. Klemme, M.D., St. Louis; Captain R. Dean Woolsey, M.C., A.U.S., and Nilson T. De Rezende, M.D., Instructor in Surgery, St. Louis University School of Medicine, St. Louis. In J. A. M. A. 123:7:393, Oct. 16, 1943.

Physical Therapy.—From observations made with the ear window of Clark, it seems that measures directed toward the promotion of vascularization of the graft give the most aid in obtaining a successful clinical result. Accordingly, two weeks after operation we advise application of moist heat to the grafted area. Lavrentjev also has emphasized that "the only means found for accelerating nervous regeneration is heat."

Immobilization.—A simple snug fitting bandage was used for immobilization in each of these 3 cases. We believe that elaborate systems of splints are unnecessary and harmful. In the first place they are likely to produce trophic ulcers unless very carefully applied. In the second place moderate activity of the extremity promotes vascularization of the nerve graft and more rapid growth of nerve fibers.

Massage and Motion.—Gentle massage and motion are begun not earlier than two weeks postoperatively.

Electrotherapy.—The results of investigations are not in agreement about the effects of electrical stimulation in retarding the rate of atrophy following denervation of muscles. Fischer and the Guttmanns reported favorably, but Chor and his co-workers obtained discouraging results. Hines, Thomson and Lazere at the University of Iowa concluded that "artificial stimulation retarded the rate of atrophy and enhanced the regeneration of denervated muscle." We have used gentle stimulation in some instances and we are of the opinion that it is of value in bringing about more rapid return of function after nerve grafting has been done.

We Couldn't Do Without Aides

By Dorothy Deming, R. N. IN AMERICAN JOURNAL OF NURSING, Oct. 1943.

Just a year before Pearl Harbor, the American Red Cross announced as a part of the national defense program the training of a limited number of volunteer women to serve in the major metropolitan hospitals as nurse's aides. Aides were to be asked to serve 100 hours annually over a period of four years after completing their course. "They will not be used to replace graduate nurses . . . in any institution."

A year of experimentation followed. By September 1941, twenty-two Red Cross chapters were conducting nurse's aide courses, using the facilities provided in forty-four hospitals, and a campaign to train 100,000 women was announced. Opportunely, the American Nurses' Association published a list of approved duties for auxiliary workers and in November 1941 gave official approval to the aide program.

Today there are 1,147 chapters carrying aide programs, 92,583 aides have completed their course, and 1,887 hospitals are using their services. There is overwhelming evidence that hospitals could not operate at their present capacity without the aides and there are constant requests for more aides and more of their time. Hundreds of aides are giving more than the stipulated volunteer hours in hospitals. No one knows how many graduate nurses they have released for military service, nor how many hours of civilian hospital nursing they have given to the overworked paid staffs. Administrators testify unanimously that a generous share of nursing procedures not calling for highly skilled training and knowledge are being carried by aides and that the work is being done to the hospitals' satisfaction, the nurses' relief, and the patients' comfort.

Book Reviews

DICTIONARY OF BIO-CHEMISTRY AND RELATED SUBJECTS. Editor-in-Chief, William Maris Malisoff, Professor of Bio-Chemistry at the Polytechnic Institute of Brooklyn. Cloth. Price, $7.50. Pp. 579. New York: Philosophical Library, 1943.

Apparently this is the first dictionary of its kind. This is almost more than a dictionary because it contains a great deal of glossary material and also a great deal of fairly lengthy authoritative discussion. It furnishes readers of biochemical literature a definition of terms used more than a decade ago as well as of terms just coined. The editor has been assisted by a number of collaborators, all authorities in their particular fields.

In view of the fact that there have been no previous dictionaries of this kind, the editor states: "It is highly fitting that a scientific dictionary should itself be experimental." This volume represents a highly successful experiment and is recommended to anyone interested in biochemistry.

A TEXT-BOOK OF PATHOLOGY: AN INTRODUCTION TO MEDICINE. By William Boyd, M.D., LL.D., M.R.C.P., Professor of Pathology and Bacteriology in the University of Toronto, Toronto. Fourth edition. Cloth. Price, $10. Pp. 1008, with 519 illustrations. Philadelphia: Lea & Febiger, 1943.

As in the other editions pathology in relation to the living patient is the motif of this book. Pathology is the study of disease from the physiological point of view. The author rightly states: "Pathology, if it is to remain alive, must become physiological in its outlook."

Boyd again says: "There is much talk in the present day regarding the coordination of the various subjects of the medical curriculum. The study of pathology in the proper spirit is the best means of breaking down the partitions which separate these subjects, for such a study forms a common meeting-ground for anatomy, histology, physiology, biochemistry and clinical medicine."

The physical therapist has had a course in pathology in her course in physical therapy. She should always remember in treating a case that she will do a better job if she knows the pathological lesion which she is treating. This book should be consulted by every physical therapist as a book of reference. This book also is recommended to the student of pathology, whether undergraduate or postgraduate.

METHODS OF TREATMENT. By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas, and Edward H. Hasinger, A.B., M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals; Attending Physician, St. Luke's Hospital, Kansas City, Mo. Eighth edition. Cloth. Price, $10. Pp. 1033, with illustrations. St. Louis, Missouri: The C. V. Mosby Company, 1943.

This volume is divided into two parts—the first dealing with the methods used in treatment and in this section there is an excellent chapter on physical therapy. The second part considers the application of therapeutics to particular diseases and the results to be expected.

In this eighth edition the new subjects included are the treatment of intractable pain with cobra venom, bee venom, etc.; sciatica due to herniation of the nucleus pulposus; indications for surgery in hypertension; pneumococci and influenzal meningitis; the Kenny treatment of poliomyelitis; vitamin K therapy in prothrombin deficiency, the new conceptions of fat metabolism and acidosis in diabetes; the use of the newer glycosides of digitalis and of the newer insulins. Accounts of the new sulpha drugs, sulfadiazine and sulfaguanindine have been added and likewise the new vitamins have been described. The section on the treatment of Addison's disease, the use of cortin and on amebiasis have been entirely rewritten.

That eight editions have been necessary since 1924 shows the popularity of this book. It can be recommended to medical students and general practitioners.

LECTURES ON PEACE AND WAR ORTHOPEDIC SURGERY. Selected from Instructional Courses of the American Academy of Orthopedic Surgeons. Edited by James E. M. Thomson, M.D. Cloth. Price, $4. Pp. 322, with illustrations. Ann Arbor, Michigan: Edwards Bros., Inc., 1943.

This is a lithoprinted volume of lectures selected from the instructional courses presented at the Eleventh Annual Assembly of the American Academy of Orthopedic Surgeons, Chicago, January 17 to 21, 1943. This includes lectures on surgery of the hand; fractures; peripheral nerve injuries; amputations; the lame back; surgery of the hip; burns and war plastic procedures; foot disabilities; differential diagnosis of bone pathology; reconstructive surgery following trauma of the upper extremity; surgical anatomy, upper extremity; surgical anatomy, lower extremity and complicating trauma associated with orthopedic casualties and a panel discussion on chemotherapy.

The contributions to this course are from experienced general and orthopedic surgeons, and some of the conclusions are in universal practice and can be safely applied in everyday work. Some of the offerings are in the experimental stage and need further trial before being adopted as routine practice.

This volume should be read by every orthopedic surgeon and general surgeon engaged in treating war or industrial injuries.

INFANTILE PARALYSIS: PHYSICIAN'S MANUAL. By S. O. Levinson, M.D., and Philip Lewin, M.D. Second edition. Paper. Pp. 99, with 44 illustrations. Springfield, Illinois: Illinois Department of Public Health, 1942.

This is an important monograph on infantile paralysis. It gives the etiology, epidemiology, pathologic changes, immunity and resistance, symptomatology and diagnosis, mortality, differential diagnosis, the prophylaxis and active treatment, prognosis, complications, convalescent care, public health aspects, special orthopedic treatment, the Kenny method and the poliomyelitis program of the Illinois Department of Public Health. It emphasizes that orthopedic care must be instituted as soon as the diagnosis is suspected. It also states that the Kenny treatment "will be incorporated into the routine treatment of 'polio' during the acute stage." Under muscle exercise and training the authors say: "Overuse or improper use of an affected limb is probably worse than disuse," and "There has been much futile discussion regarding the relative merits of the 'short-arc' and the 'long arc' of excursion during exercise."

This book should be in the hands of every physical therapist and physician.

PSYCHOLOGY IN NURSING PRACTICE. By Philip Lawrence Harriman, Ph. D., Professor of Psychology, Bucknell University, Lewisburg, Penna.; Lela L. Greenwood, B.A., R.N., Teaching Supervisor of Medical Pavilion, Bellevue Hospital, New York City; Assistant Instructor, Department of Therapeutics, New York University Medical College; and Charles E. Skinner, Ph. D., Professor of Education, New York University, New York City. Cloth. Price, $3.25. Pp. 483, with illustrations. New York: The Macmillan Company, 1942.

This book is the product of collaboration of a psychologist, a nurse and an educator. It is written for nurses to give them some insight into the fundamentals of human behavior and to afford them an opportunity of learning something about emotional reactions. For the most part the language is rigidly psychological and the frequent reference to the scientific method is somewhat overdone. Although the authors attempt to discard a mechanistic approach to psychology, it seems to the reviewer that much of their understanding is of such a nature.

Several parts of the book merit considerable praise. Chapter 2, "The Behaving Organism," gives an effective presentation of the modern understanding of the etiology of mental disturbances and points out the value of looking upon behavior as involving the function of the body within its environment. The last four chapters concerning personality and its development, mental hygiene, psychology of the patient and the art of nursing are meritorious because of their clear wording and descriptiove value about these subjects. The chapter on psychology of mental deficiency and mental disorder written by R. M. Lindner, Ph. D., deserves credit for condensing a large and important subject in a lucid fashion. It would be clearer to the reader if this man's acceptance of psychoanalysis could be made to fit into the scheme of the remainder of the book which is strongly opposed to anything dealing with the unconscious or instincts. The authors are to opposed to the psychoanalytic concepts that they labor the point unnecessarily for such a book. Their chapters on the mental processes and learning are well done except where they attempt to deal with psychiatry.

In spite of the criticisms offered the reviewer believes that the book can well be recommended for nurses. It will offer them a good introduction to the understanding of interpersonal relationship.

REHABILITATION OF THE WAR INJURED: A SYMPOSIUM: Edited by William Brown Doherty, M. D., and Dagobert D. Runes, Ph. D. Cloth. Price, $10. Pp. 684, with illustrations. New York: Philosophical Library, 1943.

Rehabilitation of the war injured is a subject that now is of vital interest to everyone in the medical profession, especially surgeons and physical therapists. This book shows what can be done in this field.

The book is divided into seven parts: neurology and psychiatry; reconstructive and plastic surgery; orthopedics; physical therapy; occupational therapy and vocational guidance; legal aspects of rehabilitation; and miscellaneous. Each of these divisions contains papers by authorities in their particular fields.

The section on physical therapy consists of articles on "Rehabilitation in the British Emergency Medical Service" by Sir Stanton Woods; "Rehabilitation in the Royal Air Force" by R. Watson-Jones; "Rehabilitation of Injured Air Crews in Great Britain" by Flight Lieutenant R. N. Houlding; "Rehabilitation of the Chronically Disabled with Special Reference to the Use of Physical Measures" by Frank H. Krusen; "Hydrotherapy as a Means of Rehabilitation" by Goeffrey Holmes; "Massage, Movement and Exercises in the Treatment of Nerve Suture and Repair" by James Mennell, and "The Uses and Abuses of Splints and Other Instruments in the Treatment of Nerve Lesions" by T. P. McMurray.

This volume can be recommended to physicians and as a reference book for physical therapists.

GOUT. By John H. Talbott, M. D., Associate in Medicine, Harvard University; Assistant Physician, Massachusetts General Hospital, Boston, Mass. Edited by Henry A. Christian, A.M., M.D., LL.D., Clinical Professor of Medicine, Tufts College Medical School, Boston. Cloth. Price, $2.50. Pp. 111, with 56 illustrations: New York, London & Toronto: Oxford University Press, 1943.

This monograph is the result of a study made by the author at the arthritis clinic of the Massachusetts General Hospital. It is reprinted from the Oxford Loose-Leaf Medicine.

Gout formerly was considered an unusual ailment in the United States, but it is now noticed that gout seems to make up about five per cent of those coming to arthritis clinics and these cases actually are in the advanced stages of the disease. Therefore, gout is of great importance to physicians treating arthritis.

This book will be a valuable addition to the library of any physician, particularly to anyone interested in the management of the various types of subacute and chronic arthritis.

NEW AND NONOFFICIAL REMEDIES, 1943. By Council on Pharmacy and Chemistry of the American Medical Association. Austin E. Smith, Editor. Cloth. Price, $1.50. Pp. 772. Chicago: American Medical Association, 1943.

In this volume are listed and described the articles that stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1943. The description of the accepted articles is based in part on investigations made by or under the direction of the Council and in part on evidence or information supplied by the manufacturer or his agents. Statements made by those commercially interested are examined critically and admitted only when they are supported by other evidence or when they conform to known facts.

This book should be in the library of every medical student and every practicing physician.

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